THE LEGAL REGIME OF ENVIRONMENTAL PROTECTION AGAINST HAZARDOUS SUBSTANCES - AN EVALUATION

ABSTRACT

THESIS

SUBMITTED FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

LAW

BY

JAVAID TALIB

(READER)

DEPARTMENT OF LAW

ALIGARH MUSLIM UNIVERSITY

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ABSTRACT

The issue of preservation and protection of environment including maintenance of ecological balance has assumed crucial significance in recent times. A healthy environment is an essential pre-requisite for healthy living. However, hazardous substances e.g. hazardous wastes and toxic chemicals, have placed heavy burden on the environment. These substances, a product of modern industrialised society, have polluted the air, water and soil beyond proportions. They have created excessive levels of noise pollution, odours and aesthetic displeasure. The environment has a natural capacity of rehabilitating itself. However, these substances, because of their toxic, persistent and corrosive properties, have virtually destroyed nature's assimilative capacity. Yet the production and use of these substances are considered inevitable to ensure economic development. They are regarded as a natural product of changing patterns of population, affluence, urbanisation and industrialisation. Since the establishment of hazardous industries and processes is considered inevitable, there is an urgent need for proper / safe management, handling and disposal of hazardous substances in order to ensure 'sustainable development'. Law, as an instrument of social welfare, can provide an effective legal framework for their proper control and management.

The environmental and human health problems associated with hazardous substances are a serious cause of concern for developing countries like India. These countries have become a dumping ground for bulk of these substances produced and discarded by developed countries. Infact, developing countries are bearing the cost of

industrialisation without being the beneficiary of fruits of development. Since many developing countries do not have the administrative or political infrastructure to properly regulate hazardous substances, they face a grave environmental threat. The issue assumes grave proportions for developing countries that are poor and have an unequal bargaining power.

It is in this context that this study has been carried out. It has used doctrinal method of research. This method has been used to analyse and ascertain the structure of norms. It has aimed at understanding different layers of norms relating to hazardous substances. It has also endeavoured to understand the interplay of their relationship. It has aimed to discover the process through which the courts have articulated vastly different layers of such norms and have, therefore, in this manner, tried to evolve a rational system of control of hazardous substances. The study is based on the premise that the environmental and human health problems posed by hazardous substances can be tackled by the proper control and management of these substances. Since some of the toxic / hazardous effects of these substances do not respect national boarders, there is a need for a concerted effort at the global level. Therefore, in this study, a comparative assessment of environmental law relating to hazardous substances has been attempted. Although the present study is primarily focused on Indian legal regime pertaining to hazardous substances, the international and regional legal instruments regulating these substances have also been dealt with. The efforts at the national level ought to be duly supported by international community so that individual countries can launch their capacity building programmes in a concerted

manner. The legal position of the U.K. and U.S. on hazardous substances has also been assessed to determine as to how these substances are regulated and controlled in developed economies. This is a useful exercise since India can incorporate relevant provisions of these regimes into national regime so as to effectively curb the menace caused by the hazardous substances. Since U.K. and U.S. produce large volumes of these substances and India has a close affinity with English and American legal systems, it is instructive to see how these substances are handled in those countries.

The study has led to infer that at the international level an anti-realist vision of international relations has got developed which down plays the significance of nation-states in favour of forces of science and norms. This vision considers the nation-state as 'the problem' and the global civil society as 'the solution'. The anti-realist vision of international relations contends that the norms should be derived from ecological science. Such norms must prevail over national interests and produce universal agreement to meet the threat to our planet earth. This has eroded the importance of sovereignty and produced tensions between two arenas of power, one at the domestic level and the other at the international level. Since the implementation of the international vision is to be made at the national level and the vision is vitiated at its very roots, there is every likelihood of policy failure and non-compliance.

The basic problem that this research has found is that the developed countries adopt and advocate the primacy of the scientific views because they operate on the belief that it is objective truth valid for all times and places. They want the developing countries to rely upon theories of risks that are based on the premise that risk can be

ascertained objectively. But risk is inherently a subjective concept and a failure to adopt a subjective approach to risk produced by hazardous wastes and chemicals leads to serious policy consequences. The fact is that environmental regulation of toxic chemicals began at the domestic level and focused initially on pesticides in United States. Projecting these levels to an international stage has led to a situation where the developing nations and their infant industries find compliance with U.S. generated standards not only inconvenient but economically unviable.

What has been the consequence of this approach? The study has contended that reliance on developed countries standards has tended to overemphasise importance of expert communities in the political process. The voice of industrial interests in developing countries is marginalised. The practicality of commerce and industry are ignored. India has suffered particularly because of this difference in approach between national interests and scientific knowledge. One consequence can be seen in the governmental adoption of standards of pollution which are internationally developed as the standards which ought to be maintained in the country. The industry and the populace find it too costly to observe such standards. That results in non compliance and the law remains effective on paper only.

There is, thus, an inherent contradiction between the values and vision enjoying agreement in the developed world and the compliance probabilities in developing economies. The international norms are readily adopted as they appeal to the intellect of the ruling classes. But such norms cannot command obedience since they do not make a realistic assessment of the concern and interest of the affected groups. These

groups do not get an opportunity to participate in the crystallisation of norms. An attempt has not been made in evolving national consensus on environmental standards. India has adopted international standards while evolving national norms. The national norm structure, therefore, appear more as imposed law rather than a beneficial law.

This study has revealed that the normative structure of Indian environmental law has developed in response to international developments. The Parliament has adopted American pattern of legislation to put a regulatory apparatus in place and leaving the details of the regulatory process to be worked out by administrative agencies. The administrative agencies in their turn have adopted the internationally accepted standards of purity and pollution which in fact reflect the international consensus of the scientific community in the developed world. Efforts have not been initiated to involve those interest groups that are likely to be affected by regulation. Nor has an attempt been made to raise the environmental consciousness among masses in India. Similarly, attempts have not been made to assess the viability of the administratively adopted standards of compliance. Nor has any attention been paid to the explicit as also implicit costs of such compliance on Indian society.

The imposed nature of environmental law has created a serious problem of non-compliance by affected interest groups. The behaviour of the affected parties is viewed as willful non-compliance. Value judgments are passed against them for deviating from the stipulated norms of environmental behaviour. It has not been realised that compliance depends on both the structural form of the statutory

framework and the good will generated by such framework among the affected interests. A large number of implementation studies have shown that compliance with a law is not automatic. Statutory structure plays a very significant role in obtaining compliance. Infact, compliance is directly related to internal coherence of the statutory structure. This study contends that a vague and ambiguous mandate will ensure only limited compliance. The compliance is likely to be further undermined by discretionary acts of the administrators. It will also be subject to exploitation by those elements of the public who oppose the law.

The study, therefore, brings forth the point that in the Indian situation, the problem of coherence of the statutory framework has not received the desired attention. The study infers that both the statute law and administrative regulations are based on values as well as forms from international models operating in developed countries. These countries have a distinct context. Their circumstances are very different. When these differences are not taken into account, the result is non-coherence of the normative framework. It is noted that this problem of non-coherence has not received due attention in India. This study has endeavoured to analyse the normative structure of the law relating to hazardous substances and examine it for coherence so that this gap may be reduced.

On the basis of detailed analysis of the existing laws and regulations, both in national as well international contexts, the study has offered suggestions for proper control and management of hazardous substances. A brief summary of these suggestions is presented below. These suggestions are offered keeping in mind the Indian context:

1. The right to a healthy environment and to sustainable development should specifically and categorically be included in the right to "life" under Article 21 of the Constitution of India.
2. The competing claims of development and sustainability of environment must be reconciled. It has now been proved by the studies that development and environment are not two different ends of continuum. Infact they are complementary to each other. Mechanisms should be devised to ensure that the two do not come into conflict.
3. The conflict between development and sustainability has affected the viability of laws and administrative measures aimed at regulating hazardous wastes and toxic chemicals. The normative framework is equally complex. However, the main problem is that of implementation. The Central Pollution Control Board and State Pollution Control Boards, created under the Indian statutes, are the basic enforcement agencies so far as the proper regulation and control of hazardous substances is concerned. These agencies have been 'wholly remiss' in the performance of their statutory obligations and virtually nothing can be done without the intervention of the Court in one form or the other. There may be many reasons for this bureaucratic inactivity and unwillingness to act, but the fact remains that implementation of the system leaves much to be desired. Effective functioning and performance of the enforcement agencies ought to be ensured. What is needed is continuous monitoring.

4. The precautionary approach incorporating the principle that prevention is better than cure and the 'polluter-pays' principle imposing absolute liability to compensate the victims of environmental hazards, ought to be given statutory recognition.
5. The environmental impact assessment study should be a mandatory requirement before any hazardous project is cleared / sanctioned. This study should include public hearing as a procedural requirement.
6. The industries that act responsibly and adhere to the law ought to be given sufficient incentives. Violations must be dealt with exemplary punishment and fines.
7. As regards proper waste management, the principle of waste minimisation is the preferred option worldwide. Steps should be taken to reduce the generation or production of waste at source. This includes the techniques like recycling and reuse and development of clean technologies. Waste disposal, either through landfilling, incineration, composting, dumping at sea or other water bodies or by sending / transporting waste to some other destination, must be the last option in the waste management policy in view of the harmful effects of these activities on human health and environment including depletion of scarce natural resources.
8. Chemicals should be regulated on the basis of their intrinsic properties (hazard), with special emphasis on persistence, toxicity and bioaccumulation. In addition to the evaluation of intrinsic hazardous properties, all aspects of their manufacture, use and disposal should be taken into account. The ultimate goal should be to

replace hazardous chemicals with those which present no identifiable hazard to man and environment.

9. In India, exhaustive measures have been devised to protect human health and environment from the ill effects of hazardous substances and their processes. However, the legal regime does not reflect uniformity of practice and appears to have emanated from different agencies with different philosophies, technological cultures and perceptions. The existing laws are rather scattered and have piecemeal approach. The enactment of a comprehensive and umbrella legislation on the subject is the urgent and pressing need of the hour.

The incorporation of the above stated suggestions can certainly improve the existing legal regime pertaining to hazardous substances. These substances, because of their toxic, persistent and corrosive properties, are creating a potential threat to global security. Besides adversely affecting the environment and human health directly, they are also contaminating the available supplies of water and other natural resources. It has created a situation of grave concern that calls for a concerted effort at the international, regional and national levels. It requires a purposeful coordination among different agencies involved. Committed and expeditious implementation of an effective legal regime can lay the foundation for a toxic-free sustainable future, which is the endeavour of this study.

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Dedicated

to my

Parents

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Javaid Talib

Abbreviations

ACP	African, Caribbean and Pacific
AIR	All India Reporter
All ER	All England Reporter
AM.U.J.Int'l Law and Pol'y	American University Journal of International Law and Policy
APELL	Awareness and Preparedness for Emergencies at Local Level
BAT	Best Available Techniques
BATNEEC	Best Available Techniques Not Entailing Excessive Cost
BBCI	Better Breathers Club of India
BEP	Best Environmental Practices
BMW	Bio-medical waste
BNA	British North America
C.U.L.R.	Cochin University Law Review
Cal.L. Rev.	Calcutta Law Review
CERC	Consumer Education and Research Centre
CFC	Chlorofluoro Carbons
CGA	Central Ganga Authority
CNG	Compressed Natural Gas
CO^2	Carbon Dioxide
Colo.J. Int'l Envt'l L and Pol'y	Colombia Journal of International Environmental Law and Policy
Colum. L. Rev.	Columbia Law Review
COP	Conference of Parties
CPCB	Central Pollution Control Board
Cri.L.J.	Criminal Law Journal
Crim LR	Criminal Law Reporter
CRZ	Coastal Regulation Zone
CSE	Centre for Science and Environment, Delhi

CSIR	Council of Scientific and Industrial Research
D C Cir	District of Columbia Circuit
dB	decibel
DDA	Delhi Development Authority
Dick J. Int'l L	Dickinson Journal of International Law
EB	Environmental burden
EC	European Community
ECJ	European Court of Justice
Ecology L Q	Ecology Law Quarterly
EEZ	Exclusive Economic Zone
EHC	Environmental Health Criteria
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency (U S)
EPOC	Environment Policy Committee
EU	European Union
F Supp	Federal Supplement
FAO	Food and Agricultural Organisation
FB	Full Bench
Fed Reg	Federal Registry
FFE	Falling Film Electrolysis
G S R	Gazetted Service Rules
GAIL	Gas Authority of India Ltd
GAP	Ganga Action Plan
GATT	General Agreement on Tariffs and Trade
Geo Int'l Envt'l L Rev	Georgia International Environmental Law Review
GMO	Genetically Modified Organism
GNP	Gross National Product
GPD	Ganga Project Directorate
Harv Envt'l L Rev.	Harvard Environmental Law Review

Harv. L. Rev.	Harvard Law Review
HMSO	His Majesty Stationery Office
I.L.M.	International Legal Materials
IAA	Impact Assessment Agency
IAEA	International Atomic Energy Agency
ICJ	International Court of Justice
IFCS	International Forum on Chemical Safety
IIT	Indian Institute of Technology
ILI	Indian Law Institute, Delhi
ILO	International Labour Organisation
ILSA J. Int'l & Com. L.	ILSA Journal of International & Commercial Law
INC	International Negotiation Committee/Intergovernmental Negotiating Committee
IPCS	International Programme on Chemical Safety
IRPTC	International Register of Potentially Toxic Chemicals
ISI	Indian Standards Institute
J. Envtl. Law	Journal of Environmental Law
J.I.L.I.	Journal of Indian Law Institute
K.L.T.	Kerala Law Times
L.A. Times	Los Angeles Times
MAH	Major Accident Hazard
MCD	Municipal Corporation of Delhi
MIC	Methyl Isocyanate
MLD	Million litres per day
MoEF	Ministry of Environment and Forest
NAC	Notified Area Committee
NAFTA	North American Free Trade Association
NCR	National Capital Region
NCT	National Capital Territory
NDMC	New Delhi Municipal Council

NEERI	National Environmental Engineering Research Institute
NGO	Non Governmental Organisation
NIMBY	Not In My Back Yard
NOC	Notes on Cases
NRCA	National River Conservation Authority
NRCD	National River Conservation Directorate
NRCP	National River Conservation Plan
OAU	Organisation of African Unity
OECD	Organisation for Economic Cooperation and Development
OJ	Oxford Journal
PCB	Polychlorinated biphenol
PIC	Prior Informed Consent
POPs	Persistent Organic Pollutants
PRP	Potentially Responsible Party
RECIEL	Review of European Community and International Environmental Law
RSPM	Respirable particulate matter
S.Ct.	Supreme Court (U.S.)
S.O.	Statutory Order
SC	Supreme Court (India)
SCC	Supreme Court Cases (India)
SDR	Special Drawing Rights
SLF	Sanity Land Fill
SPCB	State Pollution Control Board
SPM	Suspended Particulate Matter
STP	Sewage Treatment Plant
TCE	Trichlorethylene
TERI	Tata Energy Research Institute
TRI	Toxic Release Inventory
TSDF	Treatment, Storage and Disposal Facility

TTZ	Taj Trapezium
U.K.	United Kingdom
U.N.	United Nations
UNFPA	United Nations Population Fund
U.S.	United States
UCIL	Union Carbide India Ltd.
UCLA J. Envt'l L. & Pol'y	UCLA Journal of Environmental Law & Policy
ULSD	Ultra low sulphur diesel
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
Vanderbilt L.R.	Vanderbilt Law Reporter
WAD	World Asthma Day
Wash. & Lee L.Rev.	Washington and Lee Law Review
WHO	World Health Organisation
WRAP	Waste and Resources Action Programme
WTE	Waste-to-energy
YAP	Yamuna Action Plan

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Chapter – 1

Introduction

1.1 The Problem of Hazardous Substances

1.1.1 *Magnitude of the Problem*

The problem of hazardous substances in India has proved intractable. Even the Government of India has been vacillating in its estimate of the quantity of these harmful substances. In May, 1997, the Ministry of Environment & Forests (MoEF) estimated the total production of hazardous wastes[1] to be about 2000 tons per day or a total of 0.7 million tons per annum. In January 2000, the estimate went upto 9 million tons per annum but was scaled down to 8 million tons per annum in the very next month. In May, 2000 the same Ministry quoted a figure of 4.4 million tons per annum and the Director in the MoEF called that estimate authentic and final.[2] The task of estimating hazardous waste generation has been going on since 1992. But in the words of Prof. M.G.K.Menon, 'it is still lingering and not yet complete'. The following table shows the State wise number of units generating hazardous wastes and quantities generated in waste types divided into recyclable, incinerable and disposable.[3]

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1. 'Hazardous wastes' may be defined as wastes which because of their quantity, concentration or characteristics such as toxicity, flammability, persistence or corrosiveness have significant potential to pose hazards to human health or the environment, if improperly handled.
2. This information has been taken from the lead Article *Slipping Through* written by Nidhi Jamwal, 11 Down to Earth, 7-8, published on 15 October 2002.
3. *Report of the High Powered Committee on Management of Hazardous Wastes,* 40 (2002).

Table 1

State wise generation of hazardous waste, and quantities generated in wastes types (recyclable, incinerable and disposable).

S.No.	Sate	Quantity of Waste Generated (Waste Type) [in TPA]			
		Recyclable	Incinerable	Disposal	Total
1.	Andhra Pradesh	61820	5425	43853	111098
2.	Assam	-	-	166008	166008
3.	Bihar	2151	75	24351	26578
4.	Chandigarh	-	-	305	305
5.	Delhi	-	-	-	1000
6.	Goa	873	2000	5869	8742
7.	Gujarat	235840	34790	159400	430030
8.	Haryana	-	-	31046	32559
9.	Himachal Pradesh	-	63	2096	2159
10.	Karnataka	47330	3328	52585	103243
11.	Kerala	93912	272	60538	154722
12.	Maharashtra	847436	5012	1155398	2007846
13.	Madhya Pradesh	89593	1309	107767	198669
14.	Orissa	2841	-	338303	341144
15.	J& K	-	-	-	1221
16.	Pondicherry	8730	120	43	8893
17.	Punjab	9348	1128	12233	22745
18.	Rajasthan	52578	6747	95000	140610
19.	Tamil Nadu	193507	11564	196002	401073
20.	Uttar Pradesh	36819	61395	47572	145786
21.	West Bengal	45233	50894	33699	129826
	TOTAL	1728011	184122	2532068	4434257

While the quantities shown in the table are tentative, they reveal an interesting picture which shows the inequitable distribution of generation of hazardous waste. The single State of Maharashtra generates 45% of the total amount of waste generated in the country. Taken together with the States of Gujarat, Tamil Nadu, Orissa and Assam, the five States generate 75% of the hazardous wastes while the rest of India generates the remaining 25%.

The hazardous wastes generated in the country has been categorised by the Hazardous Waste (Management and Handling) Rules, 1989[4] (HW Rules) into 18 categories, which are as under:

4 S.O. 594 (E) dated 28th July, 1989.

1) Cyanide waste

2) Metal finishing waste

3) Waste containing hazardous metals like lead

4) Waste containing mercury, arsenic, thallium, cadmium

5) Non halogenated hydro-carbons

6) Halogenated hydro-carbons

7) Paints, pigments, glue, varnish, printing ink

8) Dyes and dye intermediates containing inorganic compounds

9) Dye and dye intermediates containing organic chemical compounds

10) Waste oil

11) Tarry wastes

12) Sludges from water containing heavy metals

13) phenols

14) Asbestos

15) Waste from pesticides and herbicides

16) Acid / alkaline or slurry waste

17) Off specification and discarded products

18) Discarded containers

A category wise division of the waste generated in different states reveals yet another aspect of the sordid story:[5]

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5 *supra* note 3, at 48.

Table 2
Quantity of waste generated category-wise as defined in the Hazardous Wastes (Management and Handling) Rules, 1989

WC*	AP	ASM	BIH	CH	DLH	GOA	GUJ	HAR	HP	KR	KRL	MHR	MP	OR	J&K	PON	PUN	RAJ	TN	UP	WB	TOTAL
1	60	-	0 145	-	-	-	215	2 40	-	4501	-	3394	3638	3137	-	-	31	1 2	88	52	-	15119 745
2	2207	-	-	-	-	-	58	-	-	1184	-	7156	5	16	-	1710	9	217	376	177	255	13370
3	24412	115	12150	-	-	2136	6004	2655	-	4591	-	11708	46076	138567	-	6000	1603	8807	11215	11804	41144	328987
4	1800	1075	1095	-	-	8	1139	116	-	1800	-	2821	3392	6509 76	-	-	2920	3537	8892	2240	1313	38657 76
5	1404	-	-	-	-	-	11108	-	63	62	-	6930	25	-	-	-	-	1954	206	3718	213	25683
6	-	-	-	-	-	-	3338	3	-	162	-	2413	81	-	-	-	-	205	3175	4891	-	14268
7	155	-	34	-	-	3	-	-	-	92	-	5672	307	15	-	-	29	7 2	50	1919	80	8363 2
8	11213	-	-	-	-	-	-	52	-	35	-	27775	1860	1 2	-	5	2302	507	18	3	23	43794 2
9	-	-	1015	-	-	-	129779	122	-	31	-	29595	-	-	-	-	-	146	-	118	-	160806
10	2039	3340	4933	-	-	326	8393	1980	-	11067	-	14778	21372	13447 8	-	6	2828	12716	9003	74129	29171	209528 8
11	3544	275	2435	-	-	-	16481	-	-	115	-	4900	1574	733	-	-	-	582	2250	495	25265	58649
12	34230	455	635	-	-	3722	217787	3677	2096	10234	-	1651972	93797	415 31	-	-	9092	75623	279286	41832	21972	2446825 3
13	6805	-	-	-	-	75	6513	-	-	5	-	7768	-	200 41	-	1052	-	-	-	-	1	22419 41
14	480	53	3183	-	-	-	-	1140	-	30	-	239	150	60 0	-	120	-	10 7	3352	96	1	8914 7
15	2725	-	-	-	-	2000	3863	22	-	16	-	2	3	-	-	-	2151	200	-	612	20	11614
16	2043	160695	1056	-	-	-	6298	22381	-	40790	-	21761	26217	173914 5	-	-	1750	6931	74531	2080	8447	548894 5
17	17767	-	53	-	-	22	18820	-	-	28528	-	152540	-	4021 05	-	-	-	8053	7763	382	1135	239084 05
18	214	-	-	-	-	450	234	-	-	-	-	56422	-	106 37	-	-	-	21568	115	1238	786	81133 37
Total	111098	166008	26579	305	1000	8742	430030	32559	2159	103243	154722	2007846	198669	341144	1221	8893	22745	140610	401073	145786	129826	4434257

WC* = Waste Category

1.1.2 *The Impact of Hazardous Substances*

The intensive damage caused by hazardous wastes has not been thoroughly documented but there is episodic evidence of the tremendous damage inflicted by such hazardous substances. Just to take one example, trichloroethylene (TCE) is a non-flammable, colourless liquid. It is used to remove grease from metal parts. The use of TCE in just a small industry in a small town like Aligarh has caused havoc. There are hardly 125 units using TCE in Aligarh and one of these units is located in Mitra Nagar since 1990. In the last 12 years, it caused cancer, heart disease, and even cerebral coma to the residents of the locality. The authorities refused to believe the residents and a scientist of the National Poison Information Centre in New Delhi said that unless a doctor checks the patients in Aligarh and scientists simultaneously monitor TCE levels in the air, it is very difficult to pin point the culprit. How can such simultaneous checking be carried on is any body's guess.[6]

The official apathy in respect of hazardous substances is a serious aspect of the problem. A recent example in this respect is that of toxic waste oil imports in India.[7] The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989,[8] (hereinafter 'the Basel Convention') to which India is a signatory, bans the movement of waste oil across national boundaries.[9] The Basel Convention is the basic international legal instrument regulating the transboundary movement of hazardous wastes

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6. Nidhi Jamwal, *TCE Cripples*, 12 Down to earth, 50, 31 July 2003.
7. *supra* note 2.
8. 28 I.L.M. 657 (1989).
9. Waste oil come under the categories of waste to be controlled as per the provisions of the Convention. *See* Annex 1, Entry Y9 of the Basel Convention.

and their disposal. The Convention has been implemented by HW Rules in India. These Rules lay down elaborate provisions for import and export of hazardous wastes. Rule 13 requires an importer of hazardous wastes to obtain permission from the State Pollution Control Board (SPCB). The Board is required to consider the application and forward it, within 30 days, to the MoEF. The permission is granted by the Ministry after considering the application and technological capability of the importer. A fee @ Rs. 30000 upto five hundred metric tons and thereafter Rs.5000 for every additional five hundred metric tons is charged. The port and custom authorities are required to ensure that the shipping documents are accompanied by an authentic copy of the test report. None of these requirements, Jamwal reports, were insisted upon. No permission for import of waste oil was taken and no test report was filed in case of 158 containers of hazardous waste oil imported by 17 Indian companies in October 2000. The importers were fraudulently claiming that the oil was furnace oil. An activist of the Greenpeace reported the matter to MoEF on 31st October. The Ministry apprised the High Powered Committee (HPC) constituted by the Supreme Court.[10] In November, the HPC visited the port and came to the conclusion that waste oil has been imported but wanted a test to be carried on by the Indian Institute of Petroleum (IIP), Dehradun. The Ministry took one month and ten days to direct the Maharashtra Pollution Control Board (MPCB) to get the test conducted. However, no action was initiated. The Chairman of the HPC brought the lethargy of the bureaucracy to the notice of the Supreme Court. After one month of that, the Assistant

10. HPC was constituted as per directions of the apex Court in *Research Foundation for Science* v. *Union of India*, [Writ Petition (c) No. 657 of 1995]. It was assigned the task of examining all matters relating to hazardous wastes.

Registrar of the Supreme Court wrote the Ministry and IIP pulling them up. Another month passed at the end of which Solicitor General, Harish Salve, requested Director General of the Council of Scientific and Industrial Research (CSIR), Mashelkar, to force IIP to deliver. The immediate response of IIP was to demand 2.5 lakh rupees as fee. Only on July 27, 2001 (i.e. six months after the test was ordered and samples sent to IIP), the IIP gave a draft report. After another one month it gave a final report finding all the 20 samples as hazardous. Even after that MPCB tried to shift the responsibility on to the Ministry. Only in July, 2002, MPCB filed a complaint in the Court. It took 21 months for the regular case to be filed even when the initiative was taken by the HPC. What promptitude can an ordinary citizen expect? Moreover, the provisions of Rules 13 and 14 were completely overlooked. Rule 15 is categorical. The hazardous material has to be returned, within 30 days, either to the exporter or the exporting country. The hazardous material has to be properly stored and the cost of storage has to be paid by the exporting country. No effort was made in this case to operate the provisions of the Rule.

A similar story is revealed by another matter in which the importer applied for a licence to import waste oil. But what he actually imported was sludge oil. The importer claimed that the oil which he received was oil under the MARPOL Protocol i.e. oil generated while cleaning the ship in port. The claim was fantastic because if the oil was MARPOL Protocol oil, then why the licence was needed. As if to appreciate what the importer had done, the MoEF registered the importer as a reprocessor of waste oil, thereby rewarding the law breaking efforts of the importer.[11]

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11. *supra* note 2.

Incidents like this indicate that not only the legal instruments are inadequate but the machinery to implement the law is at least inefficient if not down right corrupt.

1.2 Rationalising Generation of Hazardous Substances

The horrid picture presented by estimates of generation of hazardous substances in India coupled with bureaucratic inactivity, has been tried to be explained by a very large number of writers and thinkers as a natural product of changing parametres of population, affluence, urbanization and industrialisation The environmental burden has been conceptualised as a product of three factors. They are population (P), affluence (A) which is a proxy of consumption, and technology (T) which is how wealth is created. The product of these three factors determines the total environmental burden. It can be expressed as a formula - EB = (PxAxT) [12]

1 2 1 *Population Growth*

There is a close relationship between the number of people inhabiting the earth and environment. The population growth contributes to heightened resource consumption. The earth's resources are finite. Population growth results in depletion and despoliation of resources It generates more waste also that has to be disposed of. Human beings presently use more than 40 percent of the planet's net primary productivity.

Apart from total population base, the composition of various population groups also decides the nature of environmental burden. The present world's

12. Stuart L. Hart, *Strategies for a Sustainable World*, Harvard Business Review, 67, 70 (January-February, 1997).

population is around 6 billion. About a billion people i.e. one sixth of the world population live in the developed countries. This affluent population group accounts for more than 75 percent of the world's energy and resource consumption. They also create bulk of industrial, toxic and consumer waste. On the other end is a population group of 3 billion people having a village-based way of life. It is found in rural parts of most developing countries mainly Africa, Indian continent and China. This group is subsistence oriented and meets its basic needs directly from nature. This population group is finding its existence becoming increasingly precarious and difficult. Increased energy and resource consumption in developed countries and affluent population groups has degraded the ecosystem that used to be the mainstay of this rural based population group. Rural populations are driven further into poverty as they compete for scarce natural resources. Women and children now spend an average four to six hours per day searching for fuel wood and four to six hours per week drawing and carrying water. Paradoxically, these conditions encourage high fertility rates because, in the shortrun, children help the family garner needed resources.

It is estimated that world's population is currently growing at about 90 million people per year. The world's population will then double up over next forty years. Human kind may than outcompete most other animal species for food. The developing nations will account for 90 percent of that growth, and most of it will occur in the rural based communities. This population growth will result in a vicious cycle of resource depletion and poverty. This creates environmental problems like deforestation, soil erosion, floods and droughts. This shall push

these desperate people to migrate to already overcrowded cities creating serious environmental and social maladies. For example, as per U.N. projection, 630 million people will live in urban areas in India by 2025 A.D. Indian urban growth rate will be 3.03 percent during 2015 to 2020 A.D., while rural areas will have a reduced growth rate of 0.34 percent during the corresponding period.[13]

1.2.2 *Affluence*

Affluence is a proxy term for level of consumption. As noted above, about a billion people - one sixth of the world's population - live in the developed countries. These affluent societies account for more than 75 percent of the world's energy and resource consumption. This, in turn, creates bulk of industrial, toxic and consumer waste. For example, more than 6 billion tons of agricultural, commercial, industrial and domestic wastes are produced in the United States each year.[14] Similarly, Europeans generated around 390 kg. of domestic waste per person per day in 1992. The trend is still upward and waste processing has become an acute problem. A study of six European countries found over 55,000 sites contaminated by waste products.[15] As industrialisation spreads to developing countries of the world, they too start following consumption pattern of the developed countries. Industrialisation leads to urbanisation as well.

Demographers predict that by 2025 A.D., there will be over 30 mega cities with populations exceeding 8 million and more than 500 cities with populations

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13. The State of World Population, Note 8 (UNFPA), 1995.
14. Environmental Protection Agency (EPA), *Environmental Progress and Challenges: EPA's Update*, 79 (1988).
15. *Facts and Trends, Tackling the Waste Mountain*, Caring for Our Future, Action for Europe's Environment, 75 (1997).

exceeding 1 million [16] This growth cycle involving industrialisation, focusing initially on commodities and heavy manufacturing, coupled with urbanisation will result in oppressive levels of pollution [17] Volumes of waste generated will increase and toxic releases from industrial plants will assume dangerous proportions in the developing countries A comparison of the following figures will give an idea of the expected increase in the volumes of urban municipal waste generation in Asia [18]

Figure 1

Current urban municipal solid waste generation			
Country	GNP per capita (1995 US)[1]	Current urban population (% of total)[2]	Current urban MSW generation (kg / capita / day)
Low Income	490	27 8	0 64
Nepal	200	13 7	0 50
Bangladesh	240	18 3	0 49
Myanmar	240*	26 2	0 45
Vietnam	240	20 8	0 55
Mongolia	310	60 9	0 60
India	340	26 8	0 46
Lao PDR	350	21 7	0 69
China	620	30 3	0 70
Sri Lanka	700	22 4	0 89
Middle Income	1410	37 6	0 73
Indonesia	980	35 4	0 76
Philippines	1050	54 2	0 52
Thailand	2740	20 0	1 10
Malaysia	3890	53 7	0 81
High Income	30,990	79 5	1 64
Korea, Republic of	9,700	81 3	1 59
Hong Kong	22,990	95 0	5 07
Singapore	26,730	100 0	1 10
Japan	39,640	77 6	1 47
1 World Bank, 1997 2 United Nations, 1995 * estimated GNP *See* Figure 2 for comparison with 2025			

16 *supra* note 12, at 68

17 The word 'pollution' is derived from the Latin word 'polutus', which means 'defiled or to make dirty or to pollute' To 'pollute' means 'to get spoil or to make unclean or impure or unhealthy'. 'Pollution' may be generally defined as unfavourable alteration of our surroundings having grave consequences and a by-product of man's thoughtless actions.

18. *Source* - Daniel Hoornweg, *What a Waste Solid Waste Management in Asia*, UNEP Industry and Environment, 65-70, 67 (2000)

Figure 2

2025 urban municipal solid waste generation			
Country	GNP per capita in 2025 (1995 US)	2025 urban population (% of total)[1]	2025 urban MSW generation (kg / capita / day)
Low Income	1050	48 8	0 6-1 0
Nepal	360	34 3	0 6
Bangladesh	440	40 0	0 6
Myanmar	580	47 3	0 6
Vietnam	580	39 0	0 7
Mongolia	560	76 5	0 9
India	620	45 2	0 7
Lao PDR	850	44 5	0 8
China	1500	54 5	0 9
Sri Lanka	1300	42 6	1 0
Middle Income	3390	61 1	0 8-1 5
Indonesia	2400	60 7	1 0
Philippines	2500	74 3	0 8
Thailand	6650	39 1	1 5
Malaysia	9400	72 7	1 4
High Income	41,440	88 2	1 1-4 5
Korea, Republic of	17,600	93 7	1 4
Hong Kong	31,000	97 3	4 5
Singapore	36,000	100 0	1 1
Japan	53,500	84 9	1 3
1 United Nations, 1995			

The toxic releases from industrial units have already resulted in a number of untold miseries The industrial disaster of Bhopal, India, is the worst example This industrial accident occurred on 3rd December, 1984 in Bhopal, Madhya Pradesh 40 tons of highly toxic Methyl Isocyanate (MIC) gas escaped into atmosphere from a chemical plant of Union Carbide India Ltd (UCIL) In this disaster, over 3,500 people were killed and over 200,000 sustained severe injuries. The environmentalists termed this disaster the 'Bhoposhima Tragedy' The disaster led the U.S. Congress to enact a comprehensive legislation in their country in 1986 The Emergency Planning and Community Right-to-Know Act (EPCRA), established a comprehensive regime for emergency planning and reporting of chemical releases in the U.S. but little happened in the country where it happened. Urbanisation is coupled with technological advance.

1.2.3 *Technological Change*

The advancing frontiers of scientific knowledge coupled with the search for efficient alternatives for manufacture, storage, transportation, distribution and consumption of goods have made the 19th and 20th centuries as the period of fast technological change. Undoubtedly the production process achieved greater heights and larger variety, nevertheless it contributed significantly to the volume and variety of hazardous effluents, by-products and outputs. It is only logical to consider such technological advances to be the cause of much human misery also. Even the Indian Supreme Court subscribes to such a bleak view of technological change in the following observation:

> The planet Earth which is inhabited by human beings and other living creatures, including animals and birds, has been so created as to cater to the basic needs of all the living creatures. Living creatures do not necessarily mean the human beings, the animals, the birds, the fish, the worms, the serpents, the hydras, but also the plants of different varieties, the creepers, the grass and the vast forests. They survive on fresh air, fresh water and the sacred soil. They constitute the essential elements for survival of 'life' on this planet. The living creatures, including human beings, lived peacefully all along. But when the human beings started acting inhumanly, the era of distress began which in its wake brought new problems for survival.[19]

It may be noted that the Supreme Court vision is in line with the image of natural law philosophers of yester years. This conception visualised a human society where every body lived naturally and happily. However, technological changes have brought a perceptible change in this concept. One major change that occurred is emergence of mind set which pushes the harmful effects of hazardous substances, that have emerged as a result of technological change, from the developed world to developing world.

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19. *M.C. Mehta* v. *Kamal Nath*, (2000) 6 SCC 213, 218.

1.2.3.1 *Displacement of Hazards to Developing Countries*

The type of technology used also decides the level of environmental burden of the earth. Some technologies are able to cater human needs more effectively than others. They are less polluting. They create lesser quantities of wastes and hazardous substances. Greater use of green technologies world over is likely to decrease the environmental burden. However, unfortunately there is a wide gap in the developed and developing countries of the world on this account. The developed countries have stringent environmental regulations and so these countries tend to push most of their polluting activities to developing countries. Moreover, the costs of disposal of the polluting substances in developed countries are much higher than the costs of disposal outside the country. For example, disposal of hazardous wastes may cost $2000 per ton in a developed nation as against $40 per ton in Africa. This high cost is due to compliance costs with strict regulation and also effective local opposition to siting landfills[20] (often called NIMBY - Not In My Back Yard). NIMBY exists because people in the developed world are conscious and they do not want their soil, air and water to be contaminated. On the other hand, developing countries may find the payments available for accepting hazardous waste enormously attractive. These countries need the hard currency which hazardous wastes provide.[21] The need for rapid economic growth coupled with urgency of obtaining hard currency for payment of debts compel these countries to accept hazardous waste in return for large sums of foreign currency. The African nation of Guinea Bissau was once offered a contract worth four times its GNP

20. 'Landfill' means disposal of waste into or onto land.
21. Judy Christrup, *Clamping Down on the International Waste Trade*, 13 Greenpeace 8 (1988).

and twice the value of its national debt to accept shipments of hazardous waste.[22] $600 million were offered for accepting large shipments of hazardous wastes for five years. This figure was double the country's foreign debt and over 35 times greater than its total annual exports.

The problems associated with the hazardous wastes become much more serious in developing countries as compared to developed world. The natural environment and climate of many developing countries is more risk prone, for example, heavy rainfall causes landfill waste to percolate into the groundwater supply quickly. This is dangerous because most people in these countries drink untreated water and are, therefore, susceptible to even low levels of contaminants. Human contact with dump sites is also more likely because landfills are often located near the homes of poorest people, many of whom search landfills for possible items to use or sell. Often hazardous waste, in untreated form is pushed into open drains. This ultimately lands up in rivers that are the life blood of these countries. In addition, many developing countries do not have the administrative or political infrastructure to regulate hazardous waste disposal properly. Another potential problem is the lack of technical capabilities for disposing of hazardous waste. For example, Greenpeace witnessed factory workers pulling batteries apart with their bare hands in a Philippine lead recovery facility. This practice stands in dramatic contrast to the U.S. practice, where law requires workers in lead recycling facilities to wear full-body protection masks to shield themselves from the hazardous fumes.[23]

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22. Kitt, *Waste Exports to the Developing World: A Global Response*, 7 Geo. Int'l Envt'l L. Rev. 485, 488 (1995).
23. *Ibid.*

To sum up, the world in general is faced with the problem of grave environmental burden. Rising levels of population coupled with increasing consumption world over has made this problem assume gigantic proportion. Technology employed to meet the rising needs of population has an inherent element of generating hazardous substances. These substances pose great environmental threat. This issue is specially a cause of concern for developing countries of the world that are witnessing heavy, often unplanned industrialiation.

1.3 The Concept of Hazardous Substances

There are benefits of modernisation so far as standard of living is concerned but these benefits have come at environmental costs associated with hazardous substances. These substances are a product of modern industrialised society. Industry generates, uses and discards hazardous substances which in turn pollute water, air and soil. Although the establishment of hazardous industries and processes is considered inevitable for economic development of a country, the need for proper/safe management and disposal of hazardous substances - the by-product of economic activities - has also been widely recognised in order to ensure 'sustainable development'.[24] In a developing economy particularly, development process cannot be ignored but a balance shall have to be struck between development and ecology. There cannot be an exclusive focus on either development or ecology. Both must co-exist, or otherwise the

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24. 'Sustainable development' is defined to mean development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. [Brundtland Report 1987, *quoted in* LAW AND SUSTAINABLE DEVELOPMENT SINCE RIO, LEGAL TRENDS IN AGRICULTURE AND NATURAL RESOURCE MANAGEMENT, FAO LEGAL OFFICE (2002)]. Basically it incorporates the idea that we should live today with tomorrow in mind.

society will perish in the absence of either of the two elements noticed above.[25]

In *Live Oak Resort (P) Ltd. case*,[26] the Supreme Court of India cited with approval the following observation of Calcutta High Court in *People United for Better Living in Calcutta Public* v. *State of West Bengal*:[27]

> While it is true that in a developing country there shall have to be developments, but that development shall have to be in closest possible harmony with the environment, as otherwise there would be development but no environment, which would result in total devastation... There shall have to be a proper balance between the development and the environment so that both can co-exist without affecting the other. In the wake of the 21st century, in my view, it is neither feasible nor practicable to have a negative approach to the development process of the country or of the society, but that does not mean, without any consideration for the environment...

The word 'substance', according to the Chambers English Dictionary, means "that in which qualities or attributes exist, the existence to which qualities belong; that which makes anything, what it is the principal part; gist; subject-matter; body; matter; material; a kind of matter especially one of definite chemical nature; amount of wealth, property; solidity; body; solid; worth-foundation; ground".[28] The expression 'hazardous', in general parlance, means dangerous, perilous, risky. Thus 'hazardous substances' are those substances which because of their quality, quantity or concentration have potential to cause damage to human health or the environment.

'Substance' includes all types of matter (solids, liquids and gases). It may or may not have economic value. For example, by-products and residues are often perceived as non-valuable because they arrive in the hands of the producer free

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25. *Live Oak Resort (P) Ltd.* v. *Panchgani Hill Station Municipal Council*, (2001) 8 SCC 329, 331-32.
26. *Id.*, at 332.
27. AIR 1993 Cal. 215, 217.
28. *Quoted in U.P. State Electricity Board* v. *District Magistrate, Dehradun*, AIR 1998 All. 1, 5.

of charge and because they take up valuable space or require efforts to store and manage. Hazardous substances are also likely to be regarded as non-valuable since, having the capacity for causing harm, they require handling and storage with particular care. The cost of handling such substances may inflict substantial costs of disposal. Therefore, they carry the inherent risk of careless handling, escape or abandonment and consequent environmental harm.

Hazardous substances include flammables; explosives; heavy metals such as lead, arsenic and mercury; nuclear and petroleum fuel by-products; dangerous micro-organisms; and scores of synthetic chemical compounds like DDT and dioxins.[29] There are three well identified categories of hazardous substances, radio-active or nuclear waste, hazardous waste and hazardous chemicals. Radio-active waste has a *sui-generis* legal regime[30] and this study would not extend to such wastes. For the purposes of this study, hazardous substances are taken as connoting hazardous wastes including industrial, commercial and household waste and hazardous chemicals, also called toxic chemicals. The terms 'hazardous' and 'toxic' in relation to chemicals have been used interchangeably to refer to chemical substances which have long-term deleterious effects on human health and environment.

1.4 The Problem of Hazardous Waste

The problem of generation and disposal of hazardous waste from domestic, commercial and industrial sources has now become a core issue in

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29. SHYAM DIVAN & ARMIN ROSENCRANZ, ENVIRONMENTAL LAW AND POLICY IN INDIA 514 (2d ed. 2001).
30. Nuclear and radioactive wastes have been excluded from the purview of 'hazardous wastes' in many international and national instruments and are covered under different / separate legal regimes. *See,e.g.*, Article 1(3) of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989; Section 1003(27) of the Resource Conservation and Recovery Act, 1976 (U.S); and Rule 2 of the Hazardous Wastes (Management and Handling) Rules, 1989 (India).

contemporary environmental law. The conventional thinking that unwanted material can be conveniently disposed of by releasing it into the air or water or by putting it into or onto the land is passe. The harmful effects of these practices on environment, human health, plant and animal life have become too onerous to continue any further. This has resulted in formulation of strategies -- both at international and national levels, for minimising the generation of hazardous waste and reducing its impact through processes like recycling.[31]

Since World War II, the generation of hazardous wastes has increased tremendously in both developed and developing countries. Worldwide generation of hazardous waste is estimated to have increased from approximately 5 million metric tons in 1945 to 300 million in 1988.[32] United Nations Environment Programme (UNEP) estimates that more than 400 million tons of hazardous waste is generated annually worldwide, representing about 16% of total industrial waste.[33] If not properly managed, these wastes pose a serious risk to human health and the environment regardless of whether their ultimate disposal is within the generating country or another State. At the same time, traditional methods like landfills of handling such waste have become totally outdated.

The disposal of hazardous waste through landfill causes contamination of land which itself has become a major problem coupled with industrialisation. 'Contaminated land' may be defined as 'land that contains substances which, when present in sufficient quantities or concentrations, are likely to cause harm,

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31. 'Recycling' refers to a technique or process through which useful materials can be recovered from waste for reuse.
32. Hackett, *An Assessment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, 5 AM.U.J. Int'l Law and Pol'y, 291, 294 (1990).
33. UNEP, *The World Environment*, 1972-1992, 264 (1997).

directly or indirectly, to man, to the environment, or on occasion to other targets'.[34] Contaminated land presents a number of problems, including ground water pollution and the production of methane gas, which can lead to global warming. Physical damage to land can also be a by-product of industrial activity. Ground instability due to mining can occur long after the actual mining work has been completed. Contaminated water from abandoned mine workings can pollute water courses and ground water. Gas emanating from old mine workings can pose a health and safety hazard. The extensive contamination of land is due to expansion of manufacturing industry. Land situated in close proximity to industrial activity might be at risk from wind-blown contaminants and the migration of contaminants in surface and ground water. The potential for contamination is, therefore, not confined to the direct use of a site itself and may reflect the impact of neighbouring uses or activities.

In western countries, real interest in contaminated land began in mid-1970s, when large areas of land previously used for industrial processes became available for redevelopment specially housing development by local authorities. The issue of contaminated land in the U.K., Western Europe and the U.S. has now become increasingly important as the industrial face of these countries has changed. Traditional industries such as mining, shipbuilding and steel and gas manufacture have declined or ceased. Many sites previously occupied by these industries are now vacant and, in many cases, derelict. This has increased the pressure on governments to develop old industrial land for commercial, industrial and domestic use. Old industrial sites have layers of waste residues and contamination from previous uses and occupancy. Redevelopment requires

34. The Nato Committee on Challenges to Modern Society.

determination of the extent and degree of contamination and consequent remedial action [35]

The dumping of hazardous waste on land may cause both direct and indirect pollution Direct pollution occurs when waste itself becomes a contaminant Landfill creates a risk of direct environmental harm through the leaching of pesticides, organic compounds, cyanide and heavy metals which contaminate ground water As pointed out earlier, landfill sites also produce harmful gases The other alternative of incineration[36] creates air pollution in the form of sulphur dioxide, nitrous oxides, organic compounds, dioxins and heavy metals Incomplete combustion also creates hazards These may fall out onto nearby land and water creating a serious public health hazard Incineration also produces its own forms of waste i e toxic ash which ultimately has to be landfilled [37]

Indirect pollution may be caused due to aesthetic displeasure, replacement, re-use or transportation to disposal or recovery sites Waste can cause harm through loss of habitat, ecosystems or species due to the proliferation of waste sites Waste can also cause other harms besides pollution In case of non-renewable resources, the act of exploiting the resources to replace waste items leads to the reduction of resource stock It is a cause of grave concern if viewed from the perspective of future generations This is recognised by the Preamble of EC Directive 75/442/EEC which provides that the 'recovery of waste and the use of recovered materials should be encouraged in order to conserve natural resources'

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35 JACK ROSTRON, ENVIRONMENTAL LAW FOR THE BUILT ENVIRONMENT, 208 (2001)

36 *'Incineration' is a method of waste destruction by burning it at high temperature*

37 In May, 1993, the Royal Commission on Environmental Pollution, in its Seventeenth Report, *Incineration of Waste* (Cmnd 2181, 1993) recommended that waste incineration should play a key role in the future development of waste disposal but critics have pointed out several weaknesses of the Commission's arguments on waste minimisation

In modern industrial society, the problem of hazardous waste has become more challenging as waste grows in volume, persistence and toxicity. A major problem in the context of hazardous waste is its transboundary movement. The rationale behind transboundary movements of hazardous waste is economic. The disparity in disposal costs between developed and developing countries is the major factor contributing to the transboundary shipment of hazardous wastes. Developing countries accept the importation of hazardous waste because to some in such countries it is a business opportunity. There are neither stringent regulatory requirements for waste imports and disposal nor adequate enforcement efforts to ensure compliance. Without proper control and enforcement mechanisms, wastes imported from developed world simply gets dumped in developing countries, and the poor countries bear the cost of industrialisation without receiving the benefits of production.

Most serious in this context are shipments whose hazardous nature is fraudulently concealed. The Koko case of 1988 is an example. In return for paying $100 monthly rent to a Nigerian national for use of his farmland, five ships transported 8,000 barrels of Italian hazardous waste to the small river town of Koko in Nigeria. Some waste leaked from the barrels, causing chemical burns and a number of deaths. Under international media attention and pressure, Italy was eventually forced to repackage the waste and take it back to Italy for appropriate disposal. On its return trip to Italy, the ship carrying the waste was refused port in Spain, Denmark, the Netherlands and the U.S. As a result of this and similar scandals, Nigeria and Cameroon banned the importation of hazardous waste and instituted death penalty for anyone

found violating the ban.[38] More recently, waste shipments have been sent to Eastern Europe labeled as humanitarian aid. The problem of dumping of hazardous wastes in India from industries in other countries is also of no less magnitude, as has been in connection with waste oil cases.

The disappearance of landfill sites in developed countries, escalating disposal costs and the difficulty of obtaining approval for incineration facilities have all contributed to a growing need for transporting waste to developing countries like India which have now become a dumping ground.

Another problem is added by the ambiguity of the legal concept of waste. In ordinary parlance, waste refers to that material which we do not want. It is usually thrown in our dustbins and, later, thrown out. Waste is 'anything which lacks value for its holder'. It may also be defined as 'any object or substance under the control of a person who perceives it as having zero or negative net value'.[39] Article 2 of the Basel Convention[40] defines wastes as 'substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law'. A waste may qualify as 'hazardous' under the Basel Convention in one of the following ways:

- the waste is within a category of wastes contained in Annex-1 of the Convention (waste streams from particular manufacturing processes and hazardous constituents of wastes such as copper compounds, lead, and organic solvents), unless it does not exhibit one of the hazardous

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38. Wallace, *Asia Tires of Being the Toxic Waste Dumping Ground for the Rest of the World*, L.A. Times, A16 (1994).
39. JOHN ALDER & DAVID WILKINSON, ENVIRONMENTAL LAW & ETHICS, 286 (1999).
40. *supra* note 8.

characteristics contained in Annex-III (e.g. explosive, flammable, toxic, corrosive); or

the waste is defined or considered hazardous under the domestic legislation of the country of export, import or transit.

Article 2(1)(d) of the Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, 1991[41] (hereinafter 'the Bamako Convention'), defines hazardous wastes as 'substances which are radio-active or have been banned, cancelled, refused registration by government regulatory action, or voluntarily withdrawn from registration in the country of manufacture for human health and environmental reasons'.

Organisation for Economic Cooperation and Development (OECD) Council Decision C(88) 90 (Final) of 27 May, 1988 defines wastes as 'materials other than radio-active materials intended for disposal, for reasons specified in table 1'. Table 1 of Decision C(88) 90 lists sixteen 'reasons why materials are intended for disposal'. These include 'off-specification products', 'products whose date for appropriate use has expired', 'residues of industrial processes', and 'any materials, substances or products which the generator or exporter declares to be wastes and which are not contained in the above categories'.

Under European Community (EC) law, Article 1(a) of the 1975 Waste Framework Directive 75/442/EEC defines waste as 'any substance or object in the categories set out in Annex 1 which the holder discards or intends or is

41 30 I.L.M. 775 (1991).

required to discard'. EC member states are required to give effect to EC law in national law. However, it is not self evident that national definitions are equivalent or exactly equivalent to the Directive definition

In U.K., 'Waste' has been defined in Section 30 of the Control of Pollution Act, 1974 (COPA) As per this definition, waste includes

a) any substance which constitutes a scrap material or an effluent or other unwanted surplus substance arising from the application of any process, and

b) any substance or article which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled

The COPA definition was included in Section 75 of the Environmental Protection Act, 1990[42] (EPA). Section 75(2) of EPA defines waste as 'any substance or object in the categories set out in Schedule 2B to this Act which the holder discards or intends or is required to discard'

Italian law defines waste as 'any substance or object deriving from human activity or natural cycles which is abandoned or destined to be abandoned'.

French law defines waste as 'any residue of a production, processing or use process, any substance, material product or, more generally, any property abandoned by its owner'.

Luxembourg law defines waste as 'any substance or object which falls within the categories established by that law, and more generally, any property which the owner abandons or intends or is required to abandon' [43]

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42. As amended by the Environment Act of 1995.
43. *supra* note 39, 296.

In U.S. law, Resource Conservation and Recovery Act, 1976 (RCRA) contains an expansive definition of hazardous waste It defines hazardous waste as 'a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may -

A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or

B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.[44]

U.S. Environmental Protection Agency (EPA) is required to issue criteria for identifying the characteristics of hazardous waste and for listing particular hazardous wastes, taking into account factors such as toxicity, persistence, degradability in nature, potential for accumulation in tissue, flammability, and corrosiveness [45]

In India, HW Rules, 1989[46] define 'hazardous waste'[47] to mean any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether or when in contact with other wastes or substances, and shall include --

a) wastes listed in column (3) of Schedule-1;

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44 Section 1004(5).
45. Section 3001(a).
46. As amended in 2000 and 2003.
47. Rule 3(14).

b) wastes having constituents listed in Schedule-2 if their concentration is equal to or more than the limit indicated in the said Schedule; and

c) wastes listed in Lists "A" and "B" of Schedule-3 (Part-A) applicable only in case(s) of import or export of hazardous wastes in accordance with Rules 12, 13 and 14 if they possess any of the hazardous characteristics listed in Part-B of Schedule-3.

Explanation: For the purposes of this clause, --

i. all wastes mentioned in column (3) of Schedule-1 are hazardous wastes irrespective of concentration limits given in Schedule-2 except as otherwise indicated and Schedule-2 shall be applicable only for wastes or waste constituents not covered under column (3) of Schedule-1;

ii. Schedule-3 shall be applicable only in case(s) of import or export.

Therefore, the expressions 'waste' and 'hazardous waste' have different connotations depending on the context in which they are used. In scientific parlance, the nature of hazardous waste is adjudged by its characteristics like toxicity, corrosivity, reactivity and ignitability. In the engineering concepts, it is the situation that makes a substance 'hazardous'. In the legal parlance, hazardous wastes are those which are 'listed' or exceed the specified threshold quantities.

It is contended that an attempt to classify waste into two simple groups -- hazardous and non-hazardous -- is futile. Waste may vary in hazardousness and in some cases may be extremely hazardous. 'Hazardous waste' as a term on its own has little meaning since hazard is related to the situation and circumstances rather than just to the properties of the materials. Most materials have the potential to be hazardous if incorrectly handled. Since all materials pose a

greater or lesser threat if disposed of or handled recklessly and since the holder or producer may have no financial self-interest in ensuring that it is disposed of responsibly, waste becomes a subject of special regulatory regime. This compensates for the possible indifference of those charged with its disposal. However, some wastes are clearly more hazardous than others. Generalisations are difficult to make beyond saying that waste is something which has been abandoned by the owner and he wants to discard it or dispose it of If it is discarded or disposed of in a haphazard and unregulated manner, it may create a serious risk to human health and the environment.

Since the definition of waste is ambiguous, there are certain questions which need clarification: Whether something which can be reused should be classified as waste? Whether something of which one wants to get rid of but is valued by another since he may even buy it, can be waste? Whether a residue or a by-product from an industrial process which can be used as a replacement for a raw material should be classified as waste? Whether a substance which has been collected for recycling or for direct re-use should be considered as waste? Substances transferred to new controller for re-use or recovery are likely to be valued, as Judge Chapman in *Long* v. *Brooke*[48] observed, that 'one man's waste may be another man's valuable material'. It is possible that due to their hazardous nature, the new controller may be required to take up costly measures to reduce environmental risks to an acceptable level, or recycling or recovery may be required by law. In *Tombesi case*,[49] the European Court of Justice (ECJ) observed that the definition of waste under EC law encompasses the disposal of waste coupled with a recovery operation. The definition 'is intended to cover all objects and substances discarded by their owners, even if

48. (1980) Crim LR 109.
49. (1997) All ER (EC) 637.

they have a commercial value and are collected on a commercial basis for recycling, reclamation or reuse'. The fact that a substance is a residual material or a reusable residue cannot, *per se*, exclude it from the category of waste.

Mixed wastes create another confusion. Even developed countries differ in their approach as to the classification of mixed wastes and the threshold levels needed to be considered hazardous. For example, the U.S. hazardous waste statute i.e. RCRA provides that any solid waste that is mixed with a listed hazardous waste should itself be considered 'hazardous'. Within the EC, however, mixed wastes have been treated less strictly.

1.5 The Problem of Hazardous Chemicals

Chemicals play a major role in industry and agriculture and often have beneficial effects. However, their harmful effects, too, can not be underestimated. The risks inherent in their use vary widely. These risks depend on a number of variables: the attributes of the chemicals, the pattern of their use, the pathways through which people, animals or plants are exposed to them, the characteristics and behaviour patterns of exposed population, and varying inherent susceptibilities of the exposed group.

The health hazards posed by toxic chemicals to human, animal and plant life has been a subject of serious concern in recent years. These chemicals include industrial chemicals, pesticides and heavy metals. Worldwatch estimates that at least 75,000 different chemicals are used in pesticides, pharmaceuticals, plastics and other products. About 2.5 million tons of synthetic pesticides are used worldwide each year, and pesticide production is a multibillion dollar industry.[50]

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50. LESTER BROWN *et.al.*, VITAL SIGNS 130 (2000).

Modern industry and agriculture rely heavily on the production and use of synthetic chemicals, pesticides and fertilizers. For example, since 1945, international pesticide sales have doubled every decade to sales over $18 billion. Incidents of pesticide poisonings have doubled at roughly the same rate. Although pesticides have predominantly been used in the industrialised countries of Europe, Japan and the U.S., the fastest growing market for pesticides is now in developing countries.[51] In a programme lasting from 1955 to 1970, the World Health Organization (WHO) used pesticides to eradicate malaria and saved as many as 15 million lives. They are used to combat mosquito populations that carry malaria, yellow fever, elephantiasis and sleeping sickness. Pesticides also mitigate crop damage by disease and pests.[52] The data shows that in developing countries such as India, China and certain countries in South America, the production and use of pesticides has increased manifold, and their propensities are leaving residues even in mothers' milk.

Pesticides have benefited agricultural production but there are lot of problems in their use. They pose a danger during manufacture, application to crops and pests and through the residue left on food. Pesticides are made from toxic chemicals manufactured in high concentrations to save money during distribution. The dangers of pesticide production went unnoticed for years till Bhopal tragedy sounded the wake up call. Applying pesticides to crops poses danger to non-target plant and animal species, ground water and workers. Workers are susceptible to poisoning through ingestion, inhalation and absorption through the skin. World Health Organisation (WHO) estimated that

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51. World Health Organization, *Public Health Impact of Pesticides Used in Agriculture*, 28, 32 (1990).
52. Bartlett P. Miller, *The Effects of the GATT and the NAFTA on Pesticide Regulation: Hard Look at Hamonization*, 6 Colo. J. Int'l Envt'l. L. & Pol'y, 201, 203-5 (1995).

in 1972, 500,000 people were poisoned by pesticides and 9,000 were killed. By 1982, the figures rose to 750,000 poisonings and 13,000 deaths. Although eighty percent of all agrichemicals are used in developed countries, ninety-nine percent of pesticide deaths occur in developing countries.[53]

Despite both natural and human controls, pests and spoilage presently destroy about 25 to 50 percent of crops before and after harvest. This proportion is even higher than the average crop losses before pesticides were widely introduced after World War II. An important reason for lack of success is that pest populations become resistant to pesticides. Moreover, out of a great tonnage of pesticides used, only a very small proportion actually reaches the target pest. Some 50 to 75 percent miss the target area and less than 0.1 percent may actually reach the pest. The remainder, by definition, is an environmental contaminant that can injure people and non-target species. Residues of DDT and its more toxic breakdown products have been found literally everywhere on the planet. Since the effects of DDT on wildlife, especially birds, can be serious, it remains a threat to non-target organisms in many countries.[54] DDT was banned in the U.S. and most of the industrialised nations in early 1970s, populations of some severely affected wildlife species such as eagles and falcons have partially recovered. Its concentration in human tissues also has got reduced. Yet DDT is still manufactured and exported to many developing countries. China, India and Mexico are the leading producers and exporters of DDT.

At the stage of handling and use, particularly the farmers who handle and use pesticides are under high risks of harmful exposure. Recent data cited by the

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53. *Ibid.*
54. PAUL & ANNE EHRLICH, BETRAYAL OF SCIENCE AND REASON 163-165 (1996).

World Resources Institute, in collaboration with the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP), indicates that pesticide poisoning 'is disconcertingly common in developing nations, representing a major occupational hazard for farmers and their families'. A 1990 study of the WHO estimated that as many as 25 million workers in developing countries, or three percent of the entire agricultural workforce, suffer occupational pesticide poisoning each year. Outside the workplace, studies in developing countries indicate dangerously high levels of contamination in fish and on locally grown vegetables. Pesticide run-off from farming operations can pollute waterways, affecting aquatic life, birds and drinking water supplies. Besides pesticides, the use and handling of certain other hazardous substances can also create serious risks of exposure and harm, for example, products containing lead, asbestos, phosphates and other harmful substances.[55]

Releases also occur at the stage of storage and disposal, for example, in the case of obsolete pesticide stock. The Food and Agricultural Organization (FAO) recently identified more than 7 million kilograms of unusable and outdated pesticides in thirty-five countries in need of safe disposal. In many cases, the containers are corroded, leaking or unlabelled.[56]

As regards pesticides, special attention has been paid, in recent years, to one particular pathway, the so-called 'circle of poison'. This refers to the phenomenon where pesticides prohibited in developed world, which are exported can return in the form of dangerous residues on food items grown in

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55. PETER LALLAS & STEVE WOLFSON, INTERNATIONAL COOPERATION TO ADDRESS RISKS FROM PESTICIDES AND HAZARDOUS CHEMICALS *mimeo* (1997).
56. *Ibid.*

other countries and imported for domestic consumption. Therefore, banning of export of domestically prohibited pesticides has been suggested.

The probability of exposure to harmful levels of pesticides and hazardous chemicals varies with each chemical and with each stage of its life-cycle. Some of the most serious incidents associated with these substances result from accidents - whether in manufacture, handling, transport, use or disposal. The Bhopal disaster illustrates the extreme consequences of accidents involving dangerous pesticides. A number of other well known incidents in recent years include:

- the 1986 fire at a chemical warehouse in Basel, Switzerland that sent toxic fumes into France and Germany and released toxic chemicals into the Rhine river, damaging riverine ecosystems and polluting water supplies downstream;
- the 1990 pesticide spill from a train into the Sacramento river in California, illustrating the potential risks during transport; and
- the 1995 pesticide poisoning of 20,000 Swainson's Hawks, about five percent of the world's population, in the Argentine pampas.

Continued rise in the production, transport and use of pesticides and hazardous chemicals raises concerns over the possibility of accidental releases. In case of pesticides, the U.S. EPA estimates that about 4 billion pounds of pesticide are produced annually worldwide. The U.S. produces about 1 billion pounds, while other countries produce 3 billion pounds. More than 1400 active ingredients in over 50,000 formulations are in use around the world.[57]

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57. *Ibid.*

Besides pesticides and manufactured chemicals, the extraction of raw materials also releases dangerous substances in the environment. For example, mining for heavy metals, such as lead, silver, cadmium, zinc and others. Active mine operations are going on in many countries including developing countries where these mines are being operated by large foreign companies like U.S., Canadian and Australian. The mining process is a potential source of release of heavy metals or pollutants into the environment.

Heavy metals, such as lead, is a toxin, for which we have considerable exposure data.[58] High doses of lead can cause comas, convulsions and death. Low levels of exposure in childhood reduce intellectual capacity, with children under six years at highest risk because they are more likely to ingest soil or dust contaminated with lead, or paint which contains it.[59] There is some evidence that exposure to very low doses of lead constitutes a health hazard.[60] Lead is used mostly (65 percent) in lead-acid batteries, but some is still used in paint pigments.[61] Substitutes are available for many uses, but there is currently no substitute for lead-acid batteries.

Some chemicals are necessary for life yet pose a hazard. Inorganic minerals, such as calcium, zinc and copper are essential to life yet, in some

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58. H.A. Waldron, *Lead* in H.A. Waldron (ed.), METALS IN THE ENVIRONMENT (London, 1980); R.M. Harrison & D.P.H. Laxen, LEAD POLLUTION: CAUSES AND CONTROL (London, 1981). *See also* Michael E. Kraft & Denise Scheberle, *Environmental Justice and the Allocation of Risk: The Case of Lead and Public Health*, 23 Policy Studies Journal, 113 (1995).
59. *Alliance to End Childhood Lead Poisoning and Environmental Defense Fund, The Global Dimensions of Lead Poisoning, An Initial Analysis*, (Washington DC, 1994).
60. RONALD E. GOTS, TOXIC RISKS: SCIENCE, REGULATION AND PERCEPTION 223-46 (1993).
61. A. Cox, S. Beil & M. Neck, *The OECD Risk Reduction Strategy for Lead*, ABARE Research Report 94(12), (Camberra, 1994).

circumstances, constitute a hazard to it [62] Ionic forms of minerals such as copper, lead and zinc are highly toxic to phytoplankton, aquatic invertebrate and fish [63]

Production or formulation process of hazardous substances also release a wide range of chemicals inside and outside the workplace as unintended by-products of certain industrial operations Release of dioxins and furans is an inevitable result of hazardous, industrial, medical and sewage sludge incineration, municipal waste combustion, combustion of fossil fuels and organic materials containing chlorine, certain metals recovery processes, pulp and paper production, and others U S EPA as part of its Toxic Release Inventory, revealed that more than 300 toxic materials i e 2 2 million metric tons were released by industrial activity in the U S in 1990 Recent figures indicate that Japan has larger emissions of heavy metals than the U S and China and India have larger estimated emissions than several countries of the OECD [64]

Policy makers have now begun to look seriously at a group of synthetic organic chemicals that persist in the environment, known as persistent organic pollutants (POPs) POPs include a wide range of chemicals i e pesticides pharmaceuticals, plastics, industrial chemicals and by-products of industrial processes In this category, twelve specific chemicals, known as 'dirty dozen' fall under the following categories

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62 JOSEPH V RODRICKS, CALCULATED RISKS UNDERSTANDING THE TOXICITY AND HUMAN HEALTH RISKS OF CHEMICALS IN OUR ENVIRONMENT 12 (Cambridge, 1992)

63 M KELLY, MINING AND THE FRESHWATER ENVIRONMENT (London, 1988), G MANCE, POLLUTION THREAT OF METALS IN THE AQUATIC ENVIRONMENT, (London, 1987)

64 *supra* note 55

Pesticides	Industrial chemicals	By-products
aldrin	PCBs	dioxins
dieldrin	hexachlorobenzene	furans
chlordane		PCBs
toxaphene		hexachlorobenzene
DDT		toxaphene
endrin		
mirex		
heptachlor		

Although as a general category, POPs include a wide range of chemicals, all the 'dirty dozen' contain chlorine, known as organochlorines. Since World War II, the use of organochlorines has grown significantly. Chlorinated compounds are the backbone of industrial sector. Over 10,000 organochlorines are currently in commercial use. Chlorine compounds are used to make plastics, refine petroleum, bleach pulp and paper. They are also used to treat waste water and to produce solvents, disinfectants, flame retardants, paints, refrigerants, insulation. They are even used for dry cleaning.[65]

By definition, all POPs are persistent in the natural environment, some lasting more than 100 years. POPs are fat-soluble, bio-accumulating in the fatty tissue of humans and animals, with highest concentrations found in animals at the top of the food chain. All of us now have about 500 anthropogenic chemicals in our bodies that did not exist prior to 1920s. Many of these are POPs, with PCBs (polychlorinated biphenols) and DDE (a highly persistent breakdown product of DDT).[66] Most POPs change relatively easily from a liquid or solid to a gas, and back again. As gases, they can be transported to long distances through the atmosphere. As per the world's prevailing air currents, POPs tend to concentrate close to the polar regions, where the cold air finally condenses

65. DAVID HUNTER, JAMES SALZMAN, DURWOOD ZAFLKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 880, (2d ed. 2001).

them and they precipitate. For this reason, although most POPs are produced and consumed at lower latitudes, they are highly concentrated in the Arctic and Antarctic regions. The Inuit people in the Canadian Arctic, although they live far from any industrial centres, carry higher concentrations of PCBs in their body than any other human population. Levels of PCBs in the breast milk of Inuit women are at least five times higher than women in urban Canada. Their milk also contains high levels of chlordane and toxaphene. It has been reported that some young mothers feed their babies non-dairy coffee creamer mixed with water to avoid passing on the POPs.[67]

Less well known but still reasonably well understood are the links between some of the POPs and cancers. Certain POPs have been found to mimic hormones, thus potentially disrupting endocrine systems in both wildlife and humans. The endocrine system controls the production and release of hormones in our bodies. Hormones are the chemical signals that regulate our development and behaviour, particularly crucial to the development of the foetus and the young child. In certain respects hormones are as important as genes in determining physical and psychological characteristics. POPs may act as endocrine disruptors under certain circumstances. Some studies suggest that POPs can harm the reproductive and immune systems, and perhaps even change the behaviour of certain wildlife species by disrupting their endocrine systems.[68]

As regards health hazards posed by chemicals to human beings, it should be noted that any chemical's potential hazard involves individual characteristics.

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67. Fred Pearce, *Northern Exposure, New Scientist,* 25, May 31, 1997; Linda Hogan, *Silencing Tribal Grandmothers-Traditions, Old Values at Heart of Makah's Clash Over Whaling,* The Seattle Times, B9, December 15, 1996.
68. *supra* note 65.

For example, some individuals possess a rare genetic disorder known as Wilson's disease. They are unable to metabolise copper and it accumulates in their livers and can prove fatal. However, the exposure limits are set at a level which is safe for most people but not for Wilson's disease sufferers.

Around 1000 to 2000 new chemical products arrive in the market each year without being tested or evaluated for their potentially harmful effects. According to the estimate of American Research Council, of the 65,725 chemical substances currently utilised, the facts concerning their effects on human health are available for only 10 percent of the pesticides and 18 percent of the medicines. The testing done is generally limited to direct effects on human health and not on plant life, soil or other environmental sectors. In 1986, 500 chemical products were prohibited in one or more countries.[69]

A toxic pollutant may irritate the skin or mucous membrances; affect the nervous system; damage blood, liver, kidney or brain cells; interfere with important enzyme systems or cause damage to the reproductive system. Most of these effects are reversible and generally when the exposure stops, the individual gradually returns to normal. For example, alcohol-induced central nervous system depression disappears a few hours after a person stops drinking. However, after prolonged exposure, non-reversible effects may also occur. Similar long term damage like severe tissue damage from acid or alkali burns, mutations that are passed on to succeeding generations, teratogens that deform the developing foetus and cancer occur from persistent exposure.[70]

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69. World Commission on Environment and Development, *Our Common Future*, 224 (1987).
70. ANDERSON, GLICKSMAN, MANDELKER, TARLOCK, ENVIRONMENTAL PROTECTION - LAW AND POLICY 744 (3d ed. 2001).

The Bhopal disaster in India focussed concern on single-event tragedies Leaded gasoline and some carcinogens focus attention on risks from long-term exposure Better understanding of bio-accumulation (the accumulation of a substance in the tissue of an organism over time), bioconcentration (the increased concentration of a substance in organisms as one progresses up the food chain), the persistence over time of some chemicals (e g DDT and PCBs), the wide geographic dispersion of chemicals, interference with the endocrine system and developmental and reproductive damage have raised the level of concern about the potentially widespread effects of chemicals [71]

Thus, human and environmental exposure to hazardous wastes and toxic chemicals create almost the same kinds of risks They may explode, ignite or bring instant death from inhalation of their fumes during generation, treatment, storage, transportation or disposal processes Sometimes harmful effects may be slow but continue for longer periods of time Human exposure occurs via direct contact with the skin, inhalation or ingestion of drinking water and food in which toxins may be concentrated

Safety of the people has been one of the most basic mandates of any State Hazardous substances are, by definition a threat to that safety They have a great potential to contaminate air, water and soil, cause nuisance, noise pollution, odour, explosions, fires and poisonings, adulterate food and drugs, cause serious threat to the health and safety of workers in factories and mines as well as general public, and also deplete natural resources Yet these substances have now become inevitable and vital to the modern economy

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71 BROWN WEISS, MC CAFFREY, MAGRAW, SZARZ, LUTZ, INTFRNATIONAL ENVIRONMENTAL LAW AND POLICY 793 (1998)

There is, no doubt, some element of risk involved in their handling. It is, therefore, the duty of the State to properly assess and manage these risks in order to protect population and the environment.

1.6 Law, Risk Assessment & Risk Management in Environmental Jurisprudence

"Risk is not fate, it is choice".[72]

The risks created by exposure to hazardous substances invite governmental intervention. This intervention aims at reducing risks. Whether a risk is serious enough to warrant action is the *risk assessment question*. The issue of how to manage the risk, once it is decided that it requires risk reduction action, is the *risk management question*. Law is involved in both. The process of assessment is determined by law, and law also seeks to manage risks by enacting prohibitions and regulating use. Law, therefore, performs the role of an instrument for better environment.

1.6.1 *Risk Assessment*

Risk assessment is the methodology for making predictions about the risks attached to the introduction, maintenance or abandonment of certain hazardous activities. It is a way of ordering, structuring and interpreting existing information with the aim of creating a qualitatively different type of information, namely estimations of the likelihood (or probability) of the occurrence of adverse effects on human health or the environment.[73] The procedure of risk assessment consists of four principal steps,[74] namely :

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72. P.L. BERNSTEIN, AGAINST THE GODS: THE REMARKABLE STORY OF RISK 8 (1996).
73. Veerle Heyvaert, *Reconceptualizing Risk Assessment*,8 RECIEL, 135 (1999).
74. *Id.*, at 135-36.

1 6 1 1 *Hazard identification*: The first step is to identify the hazard The question is whether the physico-chemical and (eco) toxicological properties of a substance are linked to particular health (or public welfare) effects This is more a question in the realm of pure or applied sciences.

1 6 1 2 *Dose-response assessment* The next step is to quantify the risk potential The question is what is the relationship between the magnitude of exposure to a hazardous substance and the probability that the health effects will occur? This assessment seeks to clarify the relation between the quantity or concentration of a hazardous substance and the occurrence of adverse effects

1 6 1 3 *Exposure assessment*: The third step is to map the exposure What is the level of exposure of humans or the environment to the hazard? The object of this assessment is to make a quantitative or qualitative estimate of the dose or concentration of the substance to which a population is or may be exposed, and of the size of the population exposed. In case of environmental risks, exposure assessment aims to predict the concentration of the substance that will eventually be found in the environment. This concentration is tagged by the term 'predicted environmental concentration' (PEC)

1 6 1 4 *Risk characterization*: The last step is to label the risk. Here, risk assessors combine the test results, data and estimates generated during the identification, dose-response measurement and exposure assessment stages, and on this basis try to determine, or even calculate, the likelihood that the examined substance will adversely effect human health or the environment, and the severity of the anticipated negative effects. It is this final determination that is used as a basis for policy decision-making.

Risk assessment includes several elements i.e. description of the potential adverse health effects based on an evaluation of results of epidemiologic, clinical, toxicologic, and environmental research; extrapolation from those results to predict the type and estimate the extent of health effects in human beings under given conditions of exposure; judgments as to the number and characteristics of persons exposed at various intensities and durations; and summary judgments on the existence and overall magnitude of the public-health problem. Risk assessment also includes characterization of uncertainties inherent in the process of inferring the risk [75]

Therefore, risk assessment is the first step in the process of deciding how dangerous a substance is. It draws on a variety of disciplines, including toxicology, biostatistics, epidemiology, economics and demography Its objective is to ascertain the nature of the adverse effects of exposure and the consequences of exposure to an entire population i.e. the number of cases of disease or death.[76] Risk assessment results guide the regulators in making decisions as to which substances and activities merit regulation. But at this point policy choices have to be made. A distinction has to be made between two types of risks, the industrial risk and the public risk. In a situation of uncertainty the choice is between the risk of not using a technology which is really acceptable and safe and using a technology that is really unacceptable and unsafe. To decrease industry risk might hurt the public and to decrease public

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75. *supra* note 70, at 751.
76. Carnegie Commission on Science, Technology and Government, *Risk and the Environment Improving Regulatory Decision Making*, 76 (1993). *See also* Shere, *The Myth of Meaningful Environmental Risk Assessment*, 19 Harv. Envtl. L. Rev. 409, 412 (1995).

risk might hurt the industry. Shrader-Frechette demonstrates the problem with reference to ethyl dibromide.[77]

In 1973 ethyl dibromide was established to have carcinogenic effects. After more than a decade when ethyl dibromide residues surfaced in bread, flour and cereal products in large quantities, the risk assessors predicted that ethyl dibromide may cause 2000 cases of cancer per year in the U.S. Immediately after this, U.S. EPA banned the use of ethyl dibromide. The food industry quickly switched to methyl bromide because it was unregulated substance though it was clinically very close to ethyl dibromide. The higher level of protection leads to potential financial losses to the company. In case of uncertainty, a maximin strategy would have minimised public risks to citizens and maximise industry risks. Every time a choice is made, the policy makers have to choose whether to maximise industry risks or public risks. The approach of the scientist and the policy maker differs. The scientist usually attaches a greater loss to accepting a falsehood than to failing to acknowledge a truth. The nearest analogy to such behaviour in law is in criminal law where the principle is that if there is a reasonable doubt about the culpability of the offender he must not be punished. The State behaves so as to protect its moral legitimacy by such a rule.

The primary purpose of risk assessment is to help the regulator implement a worst-first approach. Risk assessment serves at least two major functions in regulatory decisions: first, it provides an initial assessment of risk, and, if the risk is judged to be important enough to warrant regulatory action, it is used to evaluate

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77. K. Shrader-Frechette, *Uncertainty and the Producer Strategy - The Case for Minimizing Type-II Errors in Rational Risk Evaluation*.270 in ROBERT BALDWIN, COLIN SCOTT, CHRISTOPHER HOOD, A READER ON REGULATION (Oxford University Press, 1998).

the effects of different regulatory options and to set priorities for regulatory consideration Risk assessment must ensure consistency and technical quality and should be maintained as a scientific effort separate from risk management

1 6 2 *Risk Management*

After the level of risk posed by a given substance is assessed, the real work begins i e a decision as to how to regulate the use of it Scientists assess a risk to find out what the problems are The process of deciding what to do about the problems is risk management [78]

Risk management may be described as the process of evaluating alternative regulatory actions and selecting one best option amongst them It involves a decision-making process that takes into consideration the political, social, economic and engineering information, developing, analysing and comparing regulatory options and selecting among them the best ones to tackle potential health hazards The selection process necessarily requires the use of value judgments on the issues such as acceptability of risk and the reasonableness of the costs of control [79]

The regulatory process can be initiated in many ways Each regulatory agency has jurisdiction over a large number of substances, but circumstances force allocation of resources to only a few at a time The decision as to which substances to regulate is based on the degree of hazard posed Therefore, some notion of relative hazard (implicit or explicit, internally generated or imposed

78 William Ruckelshaus, *Speech to the National Academy of Sciences*, 2, in CHARLES H RIS & PETER W PREUSS, RISK ASSESSMENT AND RISK MANAGEMENT A PROCESS, in RISK ASSESSMENT AND RISK MANAGEMENT OF INDUSTRIAL AND ENVIRONMENTAL CHEMICALS (C RICHARD COTHERN *et al* eds 1988)

79 *supra* note 70, at 751

by outside groups) is necessary. If a substance is found to be potentially dangerous in the hazard-identification step, it could be taken through the steps of dose-response assessment, exposure assessment and risk characterization before inviting regulatory consideration. However, the regulators must ensure that controls do not place undue strains on the economy. In establishing regulatory priorities, the main point of analysis should be to make useful risk comparisons so that nation's resources are used rationally. This issue of priority-setting becomes more sophisticated involving detailed scientific and policy arguments when a substance's commercial life is at stake and the probability of danger to public is to be weighed against it. And the decision may challenged in the Court.

Risk management, therefore, is the process of deciding what to do about an assessed risk or group of risks and unlike risk assessment, it 'explicitly involves consideration of a wide range of legal, economic, political and sociological factors'.[80]

The risk assessment and risk management processes inevitably overlap when risk characterization decisions are to be made. As reflected in the following figure,[81] the process of risk characterization inevitably will be influenced in some ways by the purpose for which risks are being assessed, just as risk management decisions inevitably are influenced by economic factors, regardless of underlying statutory directives.[82]

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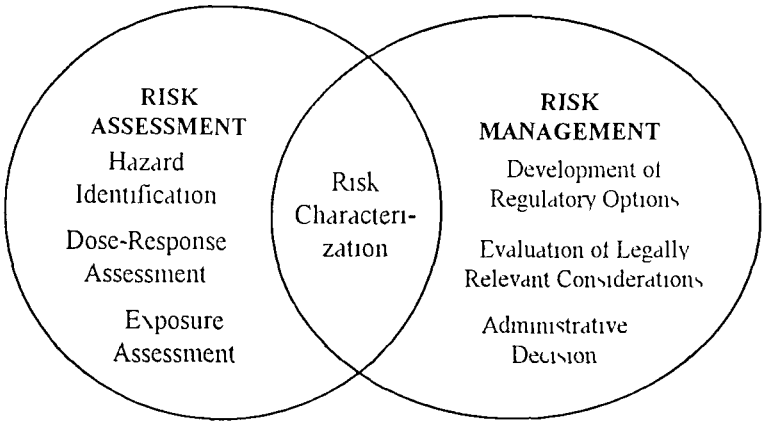
80. *supra* note 76, at 32.
81. *Source*: ROBERT V. PERCIVAL, ALAN S. MILLER, CHRISTOPHER H. SCHROEDER, JAMES P. LEAPE, ENVIRONMENTAL REGULATION, LAW, SCIENCE & POLICY 635 (4th ed. 2003).
82. *Id.*, at 634.

FIGURE

The Risk Assessment and Risk Management Processes



The public health hazard and damage to environment due to the discharge of hazardous wastes and toxic substances in air, water and on land are, unfortunately, an inevitable product of industrialisation In the absence of proof of a reasonable risk of imminent or actual harm, a legal standard requiring immediate cessation of industrial operations will cause unnecessary economic loss, including unemployment, and jeopardise a country's economy without conferring adequate benefits For example, in a public workshop held in Washington in 1983, U S EPA informed the public that a copper smelter's emissions of arsenic, a known carcinogen, created a cancer risk for workers and nearby residents The plant's employees responded that unemployment and the emotional and economic stress resulting from its closure created worse health risks than those posed by the plant's operation [83] In this situation, a remedy which may serve the ultimate public interest by ensuring clean air, clean water, fertile soil and also continued jobs in an industry vital to the nation's welfare is needed The choice is unavoidable

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83 16 Env t Rep (BNA) 648 (1985)

1.7 The Legal Response

The normative frame work of environmental law[84] in India is like a patch-work quilt. The reasons for this form are not far to seek. It was only in 1972, after the Stockholm Conference,[85] that environmental pollution emerged as a distinct problem. This is not to say that there was no pollution in India prior to that date or that the legal system provided no remedies but that the legal system took no specific notice of the problem prior to that date and designed no specialised treatment. Even after the Conference, the legislative effort was slow and sporadic. In 1974 came the first Water (Prevention and Control of Pollution) Act (Water Act). Seven years later the Air (Prevention and Control of Pollution) Act, 1981 (Air Act) was enacted. Only in 1986 was a comprehensive legislation called the Environment (Protection) Act, 1986 (EPA) was put in place. None of these legislations dealt with hazardous substances as a specific subject matter. The Water and Air Acts did deal with the pollution of water and air respectively but did not make any specific provision for hazardous substances. The EPA initially adopted a general regulatory mechanism whereunder rules were framed for various matters relating to environment. It was only in 1989 that rules were formulated for managing hazardous wastes and chemicals. Both the principles and design of control mechanism were taken from the United States assuming perhaps that the American counterpart of the EPA provided an acceptable approach to the problem of pollution by hazardous wastes and chemicals. While the actual

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84. 'Environmental law' is an instrument to protect and improve the environment and control or prevent any act or omission polluting or likely to pollute the environment. (*See K.M. Chinnappa* v. *Union of India*, AIR 2003 SC 724, 732).

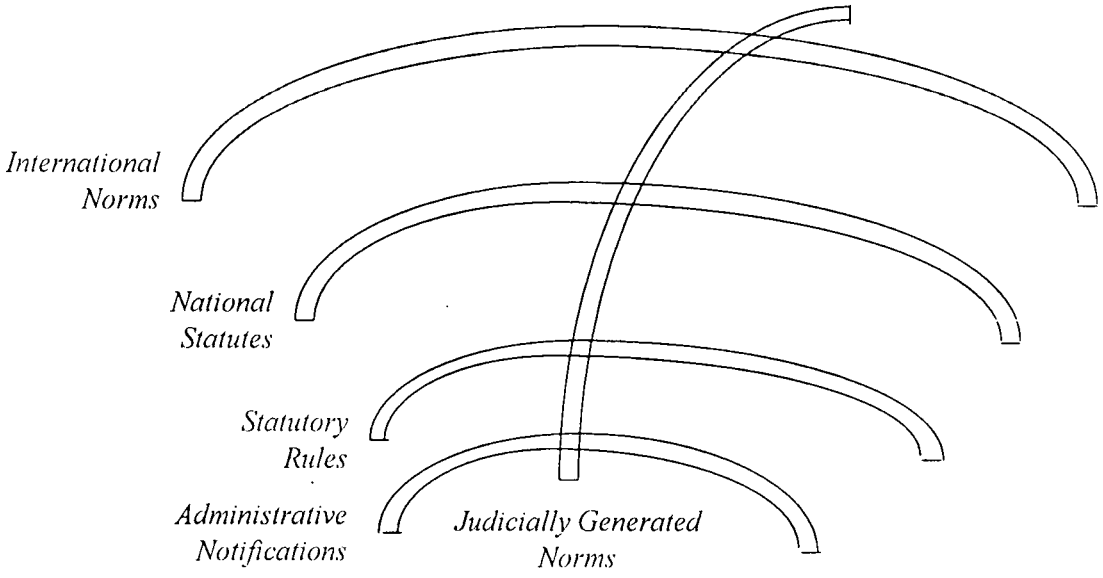
85 11 I.L.M. 1416 (1972).

norms were undoubtedly Indian their inspiration had thus come internationally, and that is where kernel of the problem lies.

In the international domain certain important general principles of environmental law like the precautionary principle or the polluter-pays principle have been developed. The statutory norms in India do not incorporate such principles but the Supreme Court has grabbed these principles from the international domain and incorporated them in the body of Indian environmental jurisprudence leaving their impact to be worked out from case to case. The statutory provisions make no recognition of the same. Thus the environmental law in respect of hazardous substances is composed of five different layers of norms generated from distinct sources. At the top is the layer composed of international norms either incorporated in conventions or international treaties or generated through judicial opinions in developed countries. The next layer consists of the statutory rules made by the Indian Parliament either in a generalised form as in the EPA or in specified provisions of a number of statutes. EPA follows the pattern of avoiding detailed rule-making and leaves the task to administrative authorities created under the rules to make statutory rules to regulate various polluting activities. The third layer consists of statutory rules which are of the nature of subordinate legislation. But that is not all. Another layer is added by administrative orders made under the rules by way of notifications or determinations in particular cases.

The fifth layer consists of judicial pronouncements of norms for environmental protection eclectically developed with frequent borrowings from other countries and international norms. This judicially generated layer of norms

supervenes across the earlier four layers embellishing the normative structure. The resulting situation can be represented in the following picture:



The picture is necessarily complicated as it represents a mixture of international norms, statutory provisions, statutory rules, administrative notifications and judicial pronouncements. The resulting product is necessarily a conglomerate of complexity, contradiction and confusion.

The complexity which the multi-layer normative structure of environmental law creates is reflected cumulatively. At the international level, for example, an anti realist vision of international relations has developed. Sonja Boehmer-Christiansen,[86] have developed a new scenario of international relationship which down plays the significance of nation-states in favour of forces of science and norms which significantly contribute to introversion of the state centered legal system. Walker presents this vision as the attitude of considering

86. Sonja Boehmer-Christiansen, *The International Research Enterprise and Global Environmental Change: Climate-Change Policy as a Research Process,* in JOHN VOGLER & MARK F. IMBER (eds.), THE ENVIRONMENT AND INTERNATIONAL RELATIONS, 174 (London, 1996).

the nation-state as 'the problem' and the global civil society as 'the solution' [87] This approach assumes that all nations share an interest in keeping the environment healthy It assumes that there is a set of shared norms derived from ecological science which has eroded the importance of sovereignty It presupposes an objectively definable condition of a healthy environment beyond human violation It thus exaggerates the independence of expert communities from the political process, and makes a social engineering problem seem to appear as a simple process of implementation

The anti-realist vision of international relations has contributed to the stress on the importance of scientific consensus in epistemic (knowledge-based) communities to suggest that there is some unifying discourse of science to be discovered in the process of formulating norms Such norms must prevail over national interests and produce universal agreement to meet the threat to our planet earth [88] Of course, there are certain forces contributing to consensus in international community The policy of negotiation, reliance upon science, the influence of Non Governmental Organisataion groups and a spirit of environmental altruism has positively contributed to some consensus [89] But that does not reflect a primacy of international norms This, however, must not cloud our vision of the dependency which the scientific advancement of developed nations impose upon the underdeveloped world

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87 R B J Walker, *Social Movements / World Politics*, 23 Millennium Journal of International Studies, 669, 696 (1994)

88 P Hass, *Obtaining International Environmental Protection Through Epistemic Consensus*, 19 Millennium Journal of Environmental Studies, 347 (1990)

89 TONY BRENTON, THE GREENING OF MACHIAVELLI THE EVOLUTION OF INTERNATIONAL ENVIRONMENTAL POLITICS, 252 (London, 1994)

The basic problem is that the developed countries adopt and advocate the primacy of the scientific views as if it is objective truth valid for all times and places They want the developing countries to rely upon theories of risks which suppose that risk can be known objectively But risk is inherently a subjective concept and a failure to adopt a subjective approach to risk produced by hazardous wastes and chemicals leads to serious policy consequences The fact is that environmental regulation of toxic chemicals began at the domestic level and focussed initially on pesticides in U S Projecting these levels to an international stage have led to a situation where the developing nations and their infant industries find compliance with U S generated standards not only inconvenient but economically unviable

A corollary of the situation is that reliance on developed countries standards tends to seriously exaggerate independence of expert communities from the political process The voice of industrial interests in nation-states is marginalised The practicality of commerce and industry are ignored Since the implementation of the international vision is to be made at the national level and the vision is vitiated from its very roots The incorporation of such vision in domestic law creates two arenas of power, one at the domestic level and the other at the international level The differences between them produce tensions which increase the likelihood of policy failure and non-compliance For example, the use of DDT in the developed world is almost non-existent but because there is no cheap substitute, the developing world continues to use it The developed world raises objections on the inability of developing countries to curb the use of DDT It seldom realises that bio-magnification in predator bird species or presence of DDT in the blubber of Arctic seals are lesser

concerns for governments in developing countries where Malaria kills significant number of people.

India has suffered particularly because of this difference in approach between national interests and scientific knowledge. The trouble with India is that while it is economically underdeveloped, it also has a large population of scientifically trained human beings whose dreams resonate to the knowledge community of science. The values and norms which scientific knowledge in developed countries has generated appeal a lot to the scientific classes and the attraction of the knowledge-base is inevitable while the community wrestles with the burden of economic under-development. One consequence can be seen in the governmental adoption of standards of pollution which are internationally developed as the standards which ought to be maintained in a country. The industry and the populace find it too costly to observe such standards, and therefore the law is more likely to go by default. Even the orders of the highest courts of the land cannot make the industry compliant. A report dated 5th July 2004 in the Hindustan Times[90] says that a Supreme Court order in September 2003 directed proper regulation of hazardous wastes in Delhi. A survey by the industries department in the city of Delhi had identified 1777 industries producing hazardous wastes. The department asked these industries to register themselves with the department and required them not to dispose of hazardous wastes till a site for that purpose was ready. Only 1200 industries registered. Now the Cabinet has decided to seal the non-compliant industries and stop their working. The process of sealing the industries is expected to be completed

90 The Hindustan Times, 6 July, 2004 at 5.

within a week. This example shows that almost one third of the industries will have to close down causing unemployment and political unrest. Three days later the government rescinded the closer decision. The cost of compliance with norms adopted from the international sector is progressive de-industrialisation of the country which a developing economy can hardly afford.

There is thus an inherent contradiction between the values and vision enjoying agreement in the comity of nations and the compliance probabilities in a developing economy. The international norms are easily adopted for they appeal to the intellect of the ruling classes. But the norms cannot command obedience since they hurt the interest of the affected groups and such groups never have the opportunity to participate in the crystallisation of norms. Evolving national consensus on environmental standards has never been done and, therefore, the international standards adopted in the national norm structure look more as imposed law rather than a beneficial law.

1.8 Statement of the Problem

The normative structure of Indian environmental law has developed in response to international developments. The Parliament has adopted American pattern of legislation to put a regulatory apparatus in place and leaving the details of the regulatory process to be worked out by administrative agencies. The administrative agencies in their turn have adopted the internationally accepted standards of purity and pollution which in fact reflect the international consensus of the scientific community in the developed world. No effort at all was made to consult the interests likely to be affected by regulations. Nor was any effort made to raise the environmental consciousness of the masses in

India. No attempt was made to assess the viability of the administratively adopted standards of compliance. Nor was any attention paid on the developmental costs which such compliance would inflict on Indian society.

The imposed nature of environmental law has created a massive problem in the shape of non-compliance by affected interests. The behaviour of the affected interests is represented as willful non-compliance with the stipulated norms of environmental behaviour. It has been little realised that compliance depends on both the structural form of the statutory framework and the good will generated by such framework among the affected interests.

A large number of implementation studies have shown that compliance with a law is not automatic. In a recent work on policy implementation, Mazmanian and Sabatier[91] have summarised four major efforts to provide some conceptual integration to the analysis of policy implementation. In one of the first attempts, Martin Rein and Francine Robinovitz[92] suggested that the implementation process be examined as the working out of three 'imperatives':

1. the respect for legal intent;
2. civil servants' concern for instrumental rationality; and
3. the general expectation that concerted action requires consensus both within the implementing agencies and in their external political system.

Paul Berman[93] focuses on the latter two 'imperatives' in his analysis of the implementation stages for federal social programmes. He emphasises the adjustments that programmes go through as they wind their way through

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91. DANIEL A. MAZMANIAN, PAUL A. SABATIER, EFFECTIVE POLICY IMPLEMENTATION (Lexington 1981).
92. Martin Rein and Francine Robinovitz, *Implementation:A Theoretical Perspective*, Working paper No. 43 (Cambridge, Mass: Joint Center for Urban Studies, 1977).
93. Paul Berman, *The Study of Macro-and Micro-Implementation*, 26 Public Policy, 157 (1978).

federal bureaucracies resistant to change and local service delivery organisations that are sensitive to their immediate political environments and to the desires of 'street-level' professionals (for example, classroom teachers). Eugene Bardach[94] provides a somewhat different approach by focusing on potential obstacles to the marshaling of the multitude of programme elements necessary for the realisation of statutory objectives. The unifying metaphor permeating his analysis is that the implementation process should be conceived as a series of games involving the efforts of numerous semiautonomous actors to protect their interests and gain access to programme elements not under their control-all within the face of considerable uncertainty and the context of general expectations that something will be attempted consistent with the legal mandate.

Whereas Bardach and, to a lesser extent, Rein and Robinovitz view implementation from the standpoint of the strategising behaviour of various actors, Donald Van Meter and Carl Van Horn[95] provide a systems model of the implementation process involving the following factors affecting programme performance:

1. policy standards and resources (basically funds),
2. support for those policies in the political environment,
3. economic and social conditions,
4. characteristics of the implementing agencies,
5. communication of policy standards and other decisions within and among implementing agencies,
6. incentives to promote compliance with policy decisions, and
7. the policy dispositions of implementing officials.

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94. EUGENE BARDACH, THE IMPLEMENTATION GAME (Cambridge, Mass. 1977).
95. Donald Van Meter and Carl Van Horn, *The Policy Implementation Process: A Conceptual Framework*, 6 Administration and Society, 445 (February 1975).

While these studies contribute significantly to theoretical analysis of non-compliant behaviour, there is a major gap in these studies in as far as they do not examine the role of statutory structure in ensuring effective implementation Later studies have shown that statutory structure plays a very significant role in obtaining compliance In fact, it is argued that compliance is directly related to internal coherence of the statutory structure

The hypothesis is that a vague and ambiguous mandate will ensure little compliance The compliance is likely to be undermined by discretionary acts of the administrators It will also be subject to exploitation by those elements of the public who oppose the law

In the Indian situation, the problem of coherence of the statutory framework has not received adequate attention It is obvious that both the statute law and administrative regulations draw their values as well as forms from international models operating in developed countries where the circumstances are very different The resulting non-coherence of the normative framework has not received its due attention It is the endeavour of the present thesis to study the normative structure of the law relating to hazardous substances

It is true that another kind of study could have been possible where attention is focussed on the behaviour of the actors Such behavioural studies would have shown the gap between the law in books and the law in action That alone would not have been enough for a behavioural study can not account for the existence of the gap For this reason, this work has not chosen to proceed on behavioural lines It would have been trite to show the gap between statutory requirements and the behaviour of affected persons That is too well known

Therefore, this study seeks to go a step further and try to ascertain the structure of the normative system and examine it for coherence so as to account for the gap.

1.9 Research Methodology

There are two well known methods of research in the sphere of law. One is called behavioural research and the other is called doctrinal research. In the behavioural research social science methods are used to ascertain the patterns of behaviour of the actors

In the doctrinal method the ideal is to logically analyse and ascertain the structure of norms This method is the older of the two and is more classically embedded in legal research in India Since the present work is not going to examine the behavioural component at all, the applicability of social science methods was hardly relevant. Therefore, this work is primarily based on doctrinal research seeking to elucidate the different layers of norms relating to hazardous substances, workout their inter-relationship and seek to discover the process through which the courts have articulated the vastly different layers of such norms and have sought to produce a rational system of control of hazardous substances

1.10 Plan of Study

The introductory chapter i.e. chapter-I discusses the magnitude of the problem and impact of hazardous substances with the help of recent examples and relevant figures. The factors resulting in the degradation of environment and thus placing heavy burden on it, have been discussed in the light of competing

claims of development and environment. In this backdrop, the issue of hazardous waste and chemicals has specifically been discussed on legal and factual basis. The discussion leads to highlighting the need for their proper regulation and control in order to lay the foundation for a toxic-free sustainable future.

Chapter-II assesses the efficacy of international norms for the regulation and control of hazardous wastes and chemicals. This chapter is divided into two sections, one dealing with hazardous waste and the other with hazardous chemicals. The issues relating to minimising the generation of wastes, reducing their harmful effects, disposal of wastes, and preventing their illegal disposal and traffic have been discussed in the light of international legal instruments The efficacy of different methods of waste disposal has also been analysed. International guidelines with regard to hazardous chemicals have been presented and analysed. The role of national governments in the assessment and management of risks associated with such toxic substances has also been discussed.

Chapters III, IV, V and VI are devoted to Indian laws pertaining to hazardous substances. Chapter-III analyses the constitutionalisation of the environmental problems which is the most distinctive contribution of the Indian courts. The Supreme Court has contributed significantly in dimensions like inventing a new fundamental right to wholesome environment and translating the vision of sustainable development in administration of environmental laws.

A comprehensive discussion on Indian laws reveals that the EPA, 1986 is the most important piece of legislation in India to regulate the management and handling of hazardous substances. EPA enables / empowers the Central Government to frame rules and issue notifications in order to regulate such

substances. In exercise of this power, the Central Government has framed and issued various rules and notifications regarding proper control and management of hazardous wastes and chemicals. Chapter-IV examines these rules and notifications in the backdrop of growing incidence of hazardous industries and processes.

Chapter-V deals with special central enactments in India pertaining to hazardous substances. A detailed review of these laws alongwith judicial response has been presented. These laws are important as they address the issue of environmental pollution in general and the handling, management and control of hazardous substances in particular.

Chapter-VI focuses on general Indian laws relating to hazardous substances. In this regard, the central statutes addressing the problems associated with hazardous substances have been reviewed. This chapter contains a detailed discussion of the basic features of these laws vis-a-vis judicial response.

Chapter-VII discusses the issues of liability and compensation in respect of hazardous substances. In this regard the relevant principles of strict / absolute liability, international law, U.K. law, U.S. law and Indian law have been compared so that the current network of liability and compensation can be further strengthened.

The last chapter i.e. chapter-VIII summarises the entire discussion and offers suggestions for the effective control and management of hazardous substances and their processes in future.

Chapter – 2

The Regulation of Hazardous Substances: International Efforts

Hazardous substances are conventionally divided into two groups, hazardous wastes and hazardous chemicals. This chapter presents an overview of the existing legal regime pertaining to hazardous wastes in the first section at the international level. Hazardous chemicals are taken up in the second section.

I - Hazardous Waste

The modern legal response to the problem of hazardous waste basically includes a two pronged programme, one aimed at minimisation and the other at disposal, which may be indicated with the help of the following table:

PROGRAMME	
Minimising Generation of Waste	**Waste Disposal**
Three Aspects	*Four Aspects*
1) Encouraging clean and efficient technologies	1) Landfilling
2) Reducing packaging	2) Incineration
3) Providing incentive for recycling and reuse of materials	3) Dumping at sea
	4) Exporting across national boundaries

2.1 Minimising Generation of Waste

Generation of certain volume of waste is inevitable in the process of production. However, prevention is better than cure. International policy seems to follow the pattern to prevent the generation of waste in the first place. Any national or international policy ought to focus on the prevention or reduction of generation of waste at source whenever feasible. Once the waste is generated an attempt ought to be made to recycle it in an environmentally

sound manner and to dispose of or release pollutants into the environment only as a last resort. The basic instrument is the Basel Convention at the international level.

2.1.1 *Basel Convention*

The Basel Convention[1] was the culmination of a process which started with the UNEP following the Stockholm Conference.[2] The UNEP had organised a Conference at Montevideo which took up minimisation as a priority subject for legal action.[3] Subsequently, the Governing Council of UNEP adopted certain guidelines in 1987, called 'Cairo Guidelines'[4] and these guidelines finally resulted in the adoption of Basel Convention.

The Basel Convention established a comprehensive legal regime at the international level. It principally deals with regulation of the transboundary movement of hazardous wastes and their disposal, but it also formulates as the forefront the principle of minimisation of waste.[5] The Convention established three basic principles and regulatory regime. The basic principles are :

- minimisation of waste;
- disposal at the most proximate place; and
- return of illegally exported waste.

The Convention established a regulatory regime composed of total prohibition in five instances and regulation in others. The total prohibition was imposed on the export of hazardous wastes:

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1. 28 I.L.M. 657 (1989).
2. 11 I.L.M. 1416 (1972).
3. Conference of Montevideo (1981).
4. Decision 14/30 of June 17, 1987.
5. KATHARINA KUMMER, INTERNATIONAL MANAGEMENT OF HAZARDOUS WASTES: THE BASEL CONVENTION AND RELATED LEGAL RULES 47-48 (Oxford 1995).

i) from OECD to non-OECD countries;

ii) from any party state to Antarctica;

iii) to a state not a party to the Convention;

iv) to a state not a party to a treaty establishing equivalent standards; and

v) to parties which have banned the import of hazardous wastes.

In other cases, a regulatory regime requiring *prior informed consent* (PIC) from the state of import and transit was incorporated.

2.1.2 *Agenda 21*

A more detailed programme for minimisation of waste was developed in Agenda 21. Programme of action for sustainable development is commonly referred to as 'Agenda 21.[6] Chapter 20 of Agenda 21 dealing with 'environmentally sound management of hazardous wastes, including prevention of illegal international traffic in hazardous wastes' provides that effective control of the generation, storage, treatment, recycling and reuse, transport, recovery and disposal of hazardous wastes is of paramount importance for proper health, environmental protection, natural resource management and sustainable development. This requires cooperation and active participation of the international community, governments and industry.

Chapter 20 of Agenda 21 included 'promoting the prevention and minimisation of hazardous waste' (programme area 'A') as the top priority in the management of hazardous waste. The proposed activities to be undertaken by the governments in this regard include the following:

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6. An 800 page global action plan on development and the environment, UN Doc. A/CONF. 151/26 (3 vols. 1992).

- change in industrial processes and consumer patterns through pollution prevention and cleaner production strategies;
- enhancement of knowledge and information on the economics of prevention and management;
- recovery of hazardous wastes and transforming them into useful materials;
- establishing cost effective policies and low-waste technologies;
- encouraging the industry to invest in preventive and/or recycling technologies;
- establishing domestic facilities to handle hazardous wastes of domestic origin;
- increase in financial support for cleaner technology and the use of biotechnologies;
- developing cleaner production awareness campaigns and inventories of hazardous waste production;
- promoting the transfer of environmentally sound, clean and low-waste production technologies from developed to developing countries;
- including in national planning and legislation an integrated approach to environmental protection taking into account the ' polluter pays' principle; and
- developing and strengthening national procedures for environmental impact assessment and application of cradle to grave approach.

2.1.3 *OECD, UNEP and EC*

OECD is an international institution often known as a 'rich-nations' club, since its membership consists only of industrialised nations. It is an

intergovernmental organisation, established in 1960, which has 26 members with advance economies including Italy, Japan, U.K and U.S. It has been responsible for the development of many key features of international environmental law and policy like polluter-pays principle, the precautionary principle, principles of consultation, non-discrimination and equal access to justice.

The OECD has numerous specialist committees and subsidiary groups. The Secretariat is comprised of various disciplinary experts organised into Directorates and Divisions. The supreme authority is the Council which approves its programme of work and uses a consensus approach to reach two distinctive types of agreement e.g. Council Decisions, which are legally binding on members, and Council Recommendations, which are not legally binding and are expressions of political goodwill.

In 1970, the OECD established an Environment Policy Committee (EPOC) to promote integration of environmental and economic policies, reduce pollution, assess environmental performance, develop environmental protection tools and improve international data and information on environmental issues. The UN initiative influenced the OECD to adopt a waste management policy in 1976.[7] The policy lays key emphasis on principle of reduction of waste at the source. Further, it proposes measures concerning the design and marketing of products and their rational use, changes in manufacturing process, the reuse of products or their reclamation and recycling, and the application of 'polluter-pays' principle to encourage waste prevention and recycling. It also focuses on administrative arrangements for waste management, reduction in the types and

7. C (76) 155 of September 28, 1976.

quantities of wastes to be disposed of, promotion of research on minimal-waste technology and creation of markets for recycled products

UNEP gave further impetus to waste management policies It exhorts states to take measures to promote the prevention, recycling and processing of waste Further it aims to establish or designate competent authorities that can plan, organise, and supervise the operations for eliminating wastes UNEP included the limiting of production of hazardous waste as a priority subject in its legal action programme [8] The issue was then referred to a group of experts which subsequently adopted Cairo Guidelines on December 10, 1985 These Guidelines were endorsed by the Governing Council of UNEP [9] Cairo Guidelines eventually resulted into the adoption of Basel Convention [10] The Guidelines recognised the differences among various countries It then focussed on establishment of an administrative framework for the good management of hazardous wastes, especially in developing countries The states were asked to take legislative and other measures to ensure the protection of human health and the environment against dangers posed by the production of hazardous wastes It focussed on the use of technologies that produce minimum waste Principle 7 of the Cairo Guidelines also insisted on prevention i e reducing production of wastes to a minimum

The Basel Convention contributed to the development of the policy of the EC Commission, as it adopted the following priorities in relation to waste management[11]

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8 *supra* note 3

9 *supra* note 4

10 Carol Annette Petsonk, *Recent Developments in International Organizations The Role of UNEP in the Development of International Environmental Law*, 5 AM U J Int'L & Poly, 351, 373 (1990)

11 *A Community Strategy for Waste Management*, SEC (89) 934 Final, 18 September, 1989

- prevention;
- recycling and reuse;
- optimisation and final disposal;
- regulation of transport; and
- remedial action.

Article 4 of the Framework Directive 75/ 442/EEC[12] (the main Directive governing waste management) requires Members States to 'take necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular:

- without risk to water, air, soil and plants and animals,
- without causing a nuisance through noise or odours,
- without adversely affecting the countryside or places of special interest'.

The above sequence was re-adopted in Council's Resolution of 7 May, 1990 on waste policy[13] which stated:

> The production of waste should, where possible, be prevented or reduced at source, particularly by the use of clean or low waste technologies and products;...Waste that can not be recycled or reused has to be disposed of in the most environmentally safe manner;...it is important for the Community as a whole to become self sufficient in waste disposal and it is desirable for Member States individually to aim at such self-sufficiency.

The EC issued Landfill Directive (99/31/EC) in July 1999 with the object to bring about a reduction in the amount of methane producing, biodegradable household and municipal waste which is disposed of in landfill sites. Article 5

12. 1975 OJL 194, at 39. As amended in 1991 by Directive 91/156/EEC (1991 OJL 78, at 2).
13. OJ No. C-122, 18-05-1990, at 2.

of the Directive has set the following reduction targets based on 1995 waste arisings:

(a) a 25 percent reduction by 2006;

(b) a 50 percent reduction by 2009; and

(c) a 65 percent reduction by 2016.

Therefore, according to the waste hierarchy, prevention is the preferred option.

2.1.4 *The U.S. Strategy*

The Stockholm spirit also led to action in United States. The U.S. Congress enacted the Pollution Prevention Act in 1990 (PPA).[14] A year after the adoption of PPA, EPA published its Pollution Prevention Strategy[15] which states :

> Air pollution control devices or industrial waste water treatment plants prevent wastes from going into the air or water, but the toxic ash and sludge that these systems produce can became hazardous waste problems themselves. Wastes disposed of on the land or in deep wells may contaminate ground water, and evaporation from ponds and lagoons can convert solid or liquid wastes into air pollution problems...While cross-media connections are complex and difficult to manage, part of the solution should be to reduce or even eliminate pollution at source. Prevention reduces emissions, discharges or wastes released to all parts of the ecosystem, thereby eliminating a potential cross-media 'shell game'.

The brief review of international developments reveal a policy of gradual development. States and governments are merely required to take appropriate measures to encourage the prevention or reduction of waste including the development of clean technologies to avoid over exhaustion of natural resources. The lack of mandatory waste prevention measures at international level explains the worldview that human welfare today is more closely

14. 42 U.S.C, SS.13101-13109.
15. 56 Fed. Reg. 7849 (1991) at 7853.

associated with the continuation of the existing high levels of economic and technological production than protection of nature. However, this high consumption life pattern is responsible for most of the world's environmental problems. In view of the desire for increased production it is unlikely that firm steps will be taken to prevent waste from arising. The principle of waste minimisation is probably unattainable since basic laws of physics indicate that production necessarily creates waste, but the lack of firm and principled policy contributes to the delusion of outcomes.

2.2 Reducing Harmful Effects

Although it is difficult in modern days to reduce the quantity of waste, it is possible at least to reduce its harmful effects. For example, Article 4 of the Directive 75/442/EEC requires Member States to take necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods that could harm the environment. In *Ministere Public* v. *Taren*,[16] the ECJ observed that Member States should have due regard to the objectives mentioned in Article 4 of the Directive 75/442/EEC and they have the freedom to organise the supervision of the waste disposal and recovery as they wish. In addition, under EC law Directive 75/439/EEC on the Disposal of Waste Oils, Directive 91/157/EEC on Batteries and Directive 94/62/EC on the Packaging of Waste contain several measures to reduce the harmful effects of waste.

2.3 Recycling & Reuse

Recycling and reuse are considered efficient methods of dealing with waste. There are minimum secondary environmental harms associated with these

16. Joined Cases 372 to 374/85, 1987 ECR 2141.

options. These methods may prove ecologically beneficial. Waste objects may be collected and redistributed for recycling and reuse. Reuse may be defined as putting materials back into use. Recovery may involve recycling, for example, the reuse of glass from bottles. The term 'recovery' in the context of waste, includes both material recycling and energy recovery. Energy can be recovered through the process of incineration. Waste can be burnt and the resultant heat used to create electricity. For example, under EC Law, Article 3 of Directive 75/442/EEC requires Member States to encourage, *inter alia*, the use of waste as a source of energy.

Article 3 of Directive 91/156/EC requires Member States to take 'appropriate measures' to 'encourage', *inter alia*, the recovery of waste by reuse. Similarly Article 5 of the Packaging Waste Directive 94/62/EC permits Member States to encourage reuse systems of packaging in an environmentally sound manner. Packaging must be designed, produced and commercialised in such a way as to permit its reuse (or recovery, including recycling).

Recommendations of OECD waste management policy relating to the reuse and recycling of beverage containers[17] and to waste paper recovery[18] are of great significance. OECD estimated that its member countries recycled, recovered or reused some 12 to 16 million tons of waste in 1984, about 4 to 5 percent of the total quantity of waste produced.[19]

The initial stage of recycling is the segregation of waste materials at source, separating out the recyclables, for example, clean paper products, glass, metals and plastic. Certain waste materials like waste food, drink, blood and guts from slaughter houses, waste lime, lime sludge from cement manufacturing,

17. C (78) 8, February 3, 1978.
18. C (79) 218, January 30, 1980.
19. OECD, FACTS ON THE ENVIRONMENT 153 (Paris,1985).

dredging of inland waters, textile waste, sludge from biological treatment plants and tannery effluent sludge are capable of being reused to improve agricultural land. Faecal matter is especially suitable for reuse on land. Similarly, soil, rock and crushed building material can also be directly reused.

Pulp as well as paper and paper-based products are principally manufactured from virgin fibre. The reuse of waste paper in manufacturing paper and board products may save substantial amount of energy and fresh water and reduce reliance on virgin fibre. It will produce fewer effluents and less atmospheric pollution. Therefore, appropriate steps should be taken to encourage the recovery of waste by means of recycling, reclamation, reuse or any other process with a view to exploiting the secondary raw materials. For example, the reuse or recovery including recycling of the packaging waste collected may be a step towards most appropriate waste management.

The reuse and recycling and the recovery of useful materials from waste, for example, energy will inevitably contribute to sustainable development. The development of clean technology and waste minimisation procedures should be encouraged. Different techniques may contribute to these developments including internal alterations to operating plants' design and processes, reuse and recycling of material and energy within a plant, redesigning and modification of products to produce environmentally sound products and creation of markets for consumption of recycled products. Care must be taken in the development of such techniques to ensure that environmental harm actually decreases.

2.4 Waste Disposal

Waste disposal is generally put at the bottom of waste management priorities At present, landfill and incineration are the two techniques generally employed for the disposal of waste.

2.4 1 *Landfill*

Landfill, as a waste disposal method, has gained popularity primarily because of cost considerations. This reduces the pressure of dumping of waste at sea. However, this method of disposal has its share of problems Much of the landfill waste is biodegradable (destroyable by nature) which produces leachate components, e.g. fatty acids and gas products. Landfill adversely affects the surrounding geology and ground water. The surface water may also become contaminated Pollutants that arise from landfills include gases, e g carbon dioxide and methane (both green house gases); volatile fatty acids, e.g acetate, propionate, butyrate; and heavy metals, e g zinc, cadmium, chromium and iron. There are several cases where landfill leachate has caused major health problems to the people exposed to leachate

The NIMBY (not in my back yard) philosophy is one of the major problems in the development of new sites for landfills. Presently, landfill has become more problematic as the amount of waste is increasing and the land available for landfill is decreasing. As a waste disposal option, the disadvantages associated with landfilling may be summarised as under.

- even in well engineered sites contaminants may leach into the ground causing pollution of ground waters;
- it adversely affects the amenity of people living nearby because of foul smell, noise, traffic, vermin, flies and litter associated with the operation of a landfill;
- there is a risk of methane buildup and explosion;
- methane is a greenhouse gas which contributes to global warming; and

- landfilling generates public concern due to its impact on man and environment

Because of the problems associated with landfilling, the U.S Congress, for example, felt that certain classes of land disposal facilities are not capable of assuring long term containment of certain hazardous waste [20] It proposed that reliance on land disposal should be minimised or eliminated, and land disposal, particularly landfill and surface impoundment, should be the least favoured method for managing hazardous waste The Congress further noted that improper hazardous waste management requires expensive, complex and time consuming corrective action Hazardous waste management practices should be conducted in a manner that protects health and the environment, reduces the need for corrective action and minimises hazardous waste generation and land disposal of hazardous waste through treatment and other means

2 4 2 *Incineration*

The environmental problems associated with landfilling especially production of greenhouse gases and ground water and surface water contamination, have led to incineration as a favoured waste disposal technique It is an efficient method of waste destruction Only non-combustible materials remain after incineration There is a considerable reduction in the volume of waste Incineration has some advantages over landfill Unlike landfill, it does not produce leachate and is able to dispose of some hazardous wastes which are unsuitable for landfilling. Moreover, incineration produces electricity as a by-product of the process. However, incineration is more expensive than landfill

20. *See* Hazardous and Solid Waste Amendments (HSWA) of 1984

Incineration plants are costly and full incineration requires difficult operating conditions. For municipal waste and chemical waste incineration, temperatures of 850^{0}C and 1200^{0}C respectively must be achieved, with sufficient contact time and mixing to ensure total combustion of waste. Due to operational deficiencies in some plants, these conditions may not be met, resulting in incomplete combustion and emission of pollutants like polychlorinated biphenyls, dioxins, and heavy metals. Many of these compounds are toxic and bioaccumulative causing environmental and health problems. Dioxins are among the most toxic chemicals known to man. Moreover, incinerators produce residues, such as bottom ashes and liquid effluents which require careful disposal. Air pollution is the most significant problem associated with incineration of waste. In these conditions, environmentalists prefer recycling over incineration.

2.4.3 *Composting*

Composting (organic recycling) is another method of waste disposal by which the use of landfill or incineration may be avoided. It is an aerobic microbial process involving a community of micro-organisms. Composting reduces the volume of waste and produces useful soil enrichment products. However, there are several problems associated with composting organic waste. Technical difficulties may arise since the feedstock is likely to be highly variable and, therefore, the product may be of variable quality. The composted material may be difficult to utilise in horticulture due to potential contamination of urban waste with toxins and heavy metals. Considerable heat is generated during composting although the excess heat can be used as energy to power the composting plant.

Therefore, in any waste management regime, waste reduction, reuse and recycling should be preferred. The policy should be directed towards reducing the waste to a minimum. Waste disposal should be seen as the least attractive option since no benefits come from the disposal of materials and considerable cost may be involved in ensuring that the disposal is environmentally sound. Different sustainable development strategies should be adapted to address the issue of waste management, for example, better housekeeping in industry, better product design, waste reduction through changing consumer consumption patterns, the use of integrated pollution control to minimise pollution, furnishing information about ways to reduce waste, energy recovery from waste and creation of markets for the sale of waste by-products. An attempt should be made to reconcile the competing claims of economic development that secure higher standards of living and the protection and enhancement of the environment. This undoubtedly requires careful setting of targets, careful assessment of these targets and a careful cost-benefit analysis.

2.5 The U.K. Strategy

So far as the proper handling and management of hazardous waste is concerned, the National Waste Strategy of U.K. deserves a special mention. The Government of U.K. published *A Way with Waste- A Draft Waste Strategy for England and Wales* in July 1999[21] setting out seven commitments for future waste management. These are:

(1) substantial increase in recycling and energy recovery;

(2) engagement of the public in reuse and recycling of household waste;

21. This was preceded by the consultation document *Less Waste More Value – A Consultation Paper on the Waste Strategy for England and Wales, 1998.*

(3) a long term framework with challenging targets and realistic programmes;

(4) a strong emphasis on waste minimisation;

(5) using the waste hierarchy as a guide, not a prescriptive set of rules;

(6) creative use of economic incentives such as the landfill tax; and

(7) increased public involvement in decision making.

The above stated strategy has now been replaced by a new Waste Strategy i.e. *Waste Strategy 2000 for England and Wales* published by the Department of Environment, Transport and the Regions on 25 May 2000 (Cmnd 4693). This strategy is based on the waste management plan as required under the EC Waste Framework Directive 75/442, the EC Hazardous Waste Directive 91/689, the EC Packaging Waste Directive 94/62 and Article 5 of the Landfill Directive 99/31. The strategy is to be reviewed every five years and annual monitoring of its implementation is to be undertaken by the Waste Strategy Monitoring Group which will produce an annual report. The key messages of the strategy are as under:

- Each year over 100 million tons of waste from households, commerce and industry is produced. Most of this waste is landfilled. Landfill can be a wasted opportunity and produces greenhouse gases. Therefore, the amount of waste sent to landfill should be reduced.
- Waste and resources should be managed better. Waste must be tackled reducing quantity of waste produced and breaking the link between economic growth and increased waste.
- Waste must increasingly be put to good use- through recycling, composting or using it as a fuel.

- The target is to reduce the amount of industrial and commercial waste landfilled to 85 percent of 1998 levels by the year 2005. In meeting this target, focus must be on recovering value and reducing environmental impact. This means not only putting waste materials to better use, but tackling any growth in waste.
- It is important to manage household waste more sustainably. At present, just 9 percent is recycled and a further 8 percent has energy recovered from it. The government has set challenging targets to increase the recycling of municipal waste i.e. to recycle or compost at least 25 percent of household waste by 2005; at least 30 percent by 2010 and at least 33 percent by 2015. Local authorities shall contribute in meeting these statutory standards and to improve waste management services. Governments will work with local authorities to pilot schemes encouraging householders to reduce waste, and participate in recycling schemes.
- For more sustainable waste management, there is a need to develop new and stronger markets for recycled materials. Waste and Resources Action Programme[22] should be set up to deliver more recycling and reuse, help develop markets and end uses for secondary materials, and promote an integrated approach to resource use.
- Public procurement can also play an important role in strengthening the demand for recycled products. Public procurement of certain recycled products be made mandatory. Increasingly, producers must arrange for recovery of their products.

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22. The Waste and Resources Action Programme (WRAP) has now been established in order to promote the development of markets for recycled materials. Its web site is at: www.wrap.org.uk.

- Landfill tax would increase by £ 1 per year, with a review in 2004. This provides waste producers and local authorities with a strong incentive to send less waste to landfill and a clear basis for planning future waste management.
- Tradeable permits be introduced restricting the amount of biodegradable municipal waste that local authorities can send to landfill. In some cases, authorities will need to introduce energy recovery facilities. The opportunities for incorporating Combined Heat and Power technology should always be considered.
- The progress towards the achievement of goals should be monitored and periodically reviewed.

One of the basic concerns of the strategy is to reduce use of landfill and to ensure better use of natural resources through waste reduction, reuse, recycling, composting and energy recovery. Substantial amount of valuable materials are currently buried in landfill sites and the strategy emphasises that 'society can not afford to continue wasting these recourses, many of which are available in limited quantities in the environment, or are difficult or environmentally damaging to extract'. The strategy calls upon business and industry to reduce waste by redesigning their products and processes, and consumers to influence waste reduction through their purchasing decisions, by avoiding over- shopping and choosing products that create less waste. It also seeks to encourage the reuse of products, recycling and composting. Where it is not possible to recycle waste, consideration should be given to use it as a fuel. Use of waste as a fuel can reduce reliance on more polluting virgin fuels and help to reduce the emissions of carbon dioxide into the atmosphere.

2.6 Dumping at Sea

On the issue of waste, international law has basically focussed on two areas e.g. dumping of waste in the high seas and transboundary movements of hazardous waste. The main reason for the inability of international law to exert effective controls over hazardous waste movement and disposal relates to the issue of sovereignty of states. However, uniform national controls would enhance the overall legal certainty of regimes and promote greater economic efficiency.

The major sources of marine pollution are land based sources and airborne depositions with additional contributions from dumping at sea. Sewage, industrial waste and agricultural run-off are the most common types of pollutant which enter the sea from land, mostly through rivers. Some of these substances are directly toxic to marine life and humans and others contribute to oxygen depletion, resulting in loss of marine life.[23]

Pollution by dumping at sea amounts to approximately 10% of overall marine pollution.[24] It is addressed by two main international conventions:

1) Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter, 1972 (London Dumping Convention);[25] and

2) Convention on the Law of the Sea, 1982 (UNCLOS).[26]

2.6.1 *London Dumping Convention*

The London Dumping Convention was the result of initiatives taken by the U.N. Conference on the Human Environment which was held at Stockholm in

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23. PATRICIA BIRNIE & ALAN BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT 404 (2d ed. 2002).
24. MAURICE SUNKIN, DAVID MONG, ROBERT WIGHT, SOURCEBOOK ON ENVIRONMENTAL LAW 344 (2d ed. 2001)
25. 11 I.L.M (1972) 1294.
26. UN Doc. A/CONF. 62/122.

June, 1972.[27] Principle 7 of this Conference provided that 'states shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea'. The Stockholm Conference is considered to be the foundation stone of modern international environmental law. It led to the globalization of environmental news and unique and open style of international environmental negotiation.

London Dumping Convention came into force on 30 August 1975[28] and by 1999 had 77 parties, including at least 38 developing countries. It is regarded as being successful in generating an international consensus on the development of policy for dumping at sea, both at international and national levels.

The London Dumping Convention recognised that marine environment and the living organisms which it supports are of vital importance to humanity. The capacity of the sea to assimilate waste and render it harmless, and its ability to regenerate natural resources, is not unlimited. The states have the sovereign right to exploit their own resources pursuant to their own environmental policies, but they also have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of their national jurisdiction. The Convention wished that international action to control pollution of the sea by dumping should be taken without delay to improve protection of the marine environment.

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27. 11 ILM (1972) 1416
28. As revised in 1993 and 1996.

The London Dumping Convention applies to all marine waters other than internal waters.[29] Territorial waters, Exclusive Economic Zones (EEZs) and Continental Shelves of States' parties are included within its scope States' parties are under an obligation to take all practicable steps to prevent the pollution of the sea by dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea' [30]

'Dumping' is defined as

i any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man made structures at sea,

ii any deliberate disposal at sea of vessels, aircraft, platforms or other man made structures at sea [31]

'Wastes or other matter' are defined as 'material or substance of any kind, form or description' [32] The Convention provides for rules prohibiting or regulating the dumping of wastes There are three different categories listed in Annexes I, II, and III The dumping of highly hazardous waste substances listed in Annex I (black list) is prohibited,[33] 'special care' substances and wastes listed in Annex II (grey list) require a prior 'special' permit[34] and the dumping of all other wastes requires a prior 'general' permit [35] Both 'special' and 'general' permits are issued by designated national authorities of the state

29 Article 3 (3)
30 Article 1
31 Article 3 (1)(a)
32 Article 3 (4)
33 Article 4 (1) (a)
34 Article 4(1)(b)
35 Article 4 (1) (c)

party.[36] These authorities are required to keep records of all matter permitted to be dumped.[37]

Annual consultative meetings of the parties are to be held[38] to monitor progress, review implementation, make amendments (by a two-thirds majority), receive national reports and disseminate relevant scientific and technical information.

The widespread ratification of London Dumping Convention implies that 'dumping at sea' has now become a subject of global regime which is based on the adoption of minimum international standards by all states leaving no place for double standards. Different categories of pollutants have been distinguished and the dumping or incineration at sea of industrial, radioactive, and other environmentally hazardous waste has been prohibited, subject only to limited exceptions for warships and emergencies. Only a limited range of largely harmless matter may now be dumped and that too under permit. Dumping is subject to supervision by an international forum i.e. the London Convention Consultative Meeting in addition to regional bodies. The Consultative Meeting has been successful in generating international consensus on the development of policy for dumping at sea. It has facilitated the adoption of stringent standards and has enabled the states, which are not involved in this activity, and a number of Non Governmental Organisations (NGOs) to apply pressure on those who are involved to moderate or abandon practices which pose a risk to the marine environment. London Dumping

36. Article 6 (1) (a) & (b).
37. Article 6 (1) (c).
38. Article 14.

Convention is widely regarded as successful[39] and is a stringent application of the precautionary principle of environmental law.

2.6.2 *United Nations Convention on the Law of the Sea*

Under UNCLOS, 1982 'dumping' has been defined[40] in the same way as in London Dumping Convention. Part XII of the Convention, dealing with the 'protection and preservation of the marine environment', provides that states should take all measures to minimise the release of toxic, harmful or noxious substances, especially those which are persistent, from land- based sources, from or through the atmosphere or by dumping.[41] States are required to adopt laws and regulations and to take other measures to prevent, reduce and control pollution of the marine environment by dumping. They have to ensure that dumping is not carried out without the permission of the competent authorities of states. Global and regional rules, standards, recommended practices and procedures to prevent, reduce and control such pollution are required to be established and are to be revised from time to time. National laws should also be made effective. Dumping within the territorial sea and the EEZ or on to the continental shelf is not be carried out without the express prior approval of the coastal state, which has a right to permit, regulate and control such dumping.[42] Laws and regulations adopted in accordance with the Convention have to be enforced by the coastal state, flag state with regard to vessels flying its flag or vessels or aircraft of its registry and by any state loading wastes or other matter within its territory or at its off-shore terminals.[43]

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39. *supra* note 23, at 420.
40. *See* Article.1 (5) (a).
41. Article 194 (3) (a).
42. Article. 210.
43. Article 216.

The London Dumping Convention and UNCLOS, 1982, ensure that no state is free to undertake dumping unilaterally without having regard to the prescribed procedures. The interest of other states has to be protected. Today, dumping may be permitted only if there are no alternatives and it is proved that environment is not going to be adversely affected.

2.7 Transboundary Movement

In international law, hazardous waste is now subject to strict transportation restrictions. In the 1970s and early 1980s large quantities of hazardous waste were shipped to developing countries which accepted them for disposal or storage in return for badly needed foreign currency earnings. Waste was less expensive to dispose of in developing countries. Nevertheless, the environmental and human health risks posed by the global movement of hazardous wastes are brought out by a series of highly publicised incidents involving rejected waste shipments. The fear led to new controls on international movement of hazardous waste. The principal results are:

- The 1989 Basel Convention.[44]
- The 1989 Lome IV Convention.[45]
- The 1991 Bamako Convention.[46]

National and international attention towards the hazards posed by transboundary movement of hazardous wastes gained momentum with the first international agreement promulgated by OECD regarding international trade in hazardous waste in 1984. Its Decision and Recommendation on

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44. *supra* note 1.
45. 29 I.L.M. 783 (1990).
46. 30 I.L.M. 775 (1991).

Transfrontier Movements of Hazardous Waste[47] required member states to provide 'adequate and timely' information to competent authorities of countries affected by the shipment of hazardous waste. The other guidelines included the principle of prior consent from the importing and any transit states for intra-OECD shipments of waste; providing of information by the exporter to the importing country regarding the origin, nature, composition and quantity of waste to be shipped as well as environmental risks involved in transport; and the responsibility of generator if an importer could not safely dispose of the waste. In 1986, OECD prohibited both the export of hazardous waste to non-OECD countries without prior consent from the receiving country or notice to transit nations, and the export of hazardous waste to non-OECD states that lack proper disposal facilities.[48]

In 1987, the UNEP's Governing Council adopted 'Cairo Guidelines', a non-binding agreement on environmentally sound management of hazardous waste, and also agreed to commence international negotiations on a legally binding instrument to govern the transboundary movements of hazardous waste. As noted earlier, the 'Cairo Guidelines' eventually resulted into the adoption of the Basel Convention. The decisions and recommendations of OECD as well UNEP action served as a basis for Basel Convention negotiations and provided an example of how legal developments in one international organisation can result in a more far reaching agreement in another forum.

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47. C (83) 180, February 13, 1984.
48. Council Decision on Exports of Hazardous Waste from the OECD Area, C (86) 64, June 5, 1986.

2.7.1 *Basel Convention*

There are three basic approaches governing the issue of transboundary movement of hazardous waste:

(i) Outright ban on import or export of hazardous wastes. Many developing countries follow this approach and Greenpeace International has counted some eighty nine such countries.[49]

(ii) Regulating the trade in wastes on a case-by-case basis. For example, several African countries adopted the Convention that bans the import of hazardous wastes into Africa but permits trade in such wastes among themselves, subject to certain controls (the Bamako Convention).

(iii) Allowing the hazardous waste trade to continue, subject to several requirements, particularly notification by the exporting country to the importing country, and either express or implied consent by the importing country.

The lack of uniformity in the regulations coupled with the concern about the dumping of hazardous wastes in countries with insufficient resources to enforce ban on imports, prompted UNEP to convene a conference to draft a Convention on transboundary movement of hazardous waste. The Basel Convention, adopted in March 1989, entered into force on May 5,1992. It represents a compromise between different approaches addressing the issue of transboundary shipment of hazardous wastes. The Basel Convention is intended to establish a global regime and the rules are designed to regulate

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49. Statement of Jim Vallete, Greenpeace International, *Senate 1992 Hearing*, at 23.

trade in hazardous wastes, rather than prohibit it, which is essentially a laissez-faire approach. It is recognised as the key global legal instrument dealing with the issue of hazardous waste management and its Secretariat provides advice and circulates information to countries all over the world. As of August 2001, 148 countries were party to the Basel Convention.

Although the proposal to completely ban international hazardous waste movements was rejected, Basel Convention still recognised in the Preamble that every state has a sovereign right to ban the entry or disposal of foreign hazardous wastes and other wastes in its territory and that there is an increasing desire for the prohibition of transboundary movements of hazardous wastes and their disposal in other states, especially developing countries. In this regard, the Conference of the Parties is required to evaluate the effectiveness of the Convention periodically, and to consider the adoption of a complete or partial ban in the light of latest scientific, environmental, technical and economic information.[50] The Convention also confirms the sovereign right of states to ban imports, either on an individual, bilateral or regional basis, provided the exercise of this right is notified to other parties through its Secretariat.[51]

'Wastes' are defined as substances which are subject to disposal.[52] The disposal operations are those listed in Annex IV.[53] 'Disposal' includes landfill, incineration or release into a water- body as well as recycling operations. The inclusion of recycling operations in the definition of 'disposal' has been criticised on the ground that the requirements for recycling should have been

50. Article 15 (7).
51. Article 4 (I) (a).
52. Article 2 (1).
53. Article 2(4).

made less burdensome to encourage an environmentally preferable alternative to final disposal.

A waste is included in the scope of the Convention if it is subject to transboundary movement and belongs to one of the following two categories:[54]

a) hazardous wastes e.g. wastes covered by Annexes I and III, or defined as hazardous by the national legislation of one or more of the parties involved; and

b) 'other wastes', which means household wastes and residues arising from their incineration.

Radioactive wastes subject to other international controls e.g. under the International Atomic Energy Agency (IAEA) and wastes derived from the normal operations of ships covered by other international instruments e.g. International Convention for the Prevention of Pollution from Ships (MARPOL Convention) have been excluded from the purview of Basel Convention.[55]

The Convention has adopted the principle of minimising the generation of hazardous waste and promoting disposal at source. The development and implementation of low-waste technologies[56] and availability of disposal facilities within their jurisdiction[57] have to be ensured by the parties. Exports have to be minimised[58] and hazardous wastes may be exported only if the state of export itself does not have the capacity or facilities to dispose them of in an

54. Article 1, Annexes I to III
55. Article 1 (3) & (4).
56. Article 10 (2) (c).
57. Article 4 (2) (b).
58. Article 4 (2) (d).

environmentally sound manner,[59] or where the wastes are required as a raw material for recycling in the state of import.[60] The primary obligation is to manage the transboundary movement of hazardous wastes in an environmentally sound manner.[61] In this regard, the basic responsibility lies with the generating state which can not be transferred to the state of import or transit.[62] The generating state has to ensure that hazardous wastes are not exported to countries, particularly developing countries, which have either prohibited by their legislation all imports of waste, or if it has reason to believe that the waste in question will not be managed in an environmentally sound manner in the state of import.[63] Likewise, a state has to prevent the import of hazardous wastes into its territory if it has reason to believe that they would not be managed in an environmentally sound manner.[64] Parties are also obliged to re-import wastes under certain circumstances where the wastes can not be managed in an environmentally sound manner in the receiving country and in instances of illegal traffic.[65]

The expression 'environmentally sound management' has been defined as 'taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.[66] The task of defining the expression more specifically was delegated to the Conference of the Parties at its first meeting.[67] For environmentally sound management of hazardous wastes, each party is required to establish an authorisation system

59. Article 4 (9) (a).
60. Article 4 (9) (b).
61. Article 4 (8).
62. Article 4 (10).
63. Article 4 (2) (e).
64. Article 4 (2) (g).
65. Articles 8 and 9 (2).
66. Article 2 (8).
67. Article 4 (2) (e) and (8).

for persons handling hazardous wastes,[68] and to ensure that every hazardous waste movement is accompanied by a movement document from the point at which the movement commences until the point of disposal. The movement document should contain information specified in Annex V (B) and be signed by each person who takes charge of the wastes.[69] Parties must also ensure that packaging, labeling and transport is in conformity with generally accepted, recognised and relevant international rules, standards and practices.[70]

A party should not permit hazardous wastes or other wastes to be exported to a non-party or to be imported from a non-party.[71] However, transit of wastes through non-party states is not prohibited if carried out in accordance with the relevant provisions of the Convention.[72] Moreover, parties have a right to enter into bilateral, multilateral, or regional agreements or arrangements regarding transboundary movement of hazardous or other wastes with parties or non-parties provided such agreements or arrangements do not derogate from the principle of environmentally sound management and are not less environmentally sound than those provided for by this Convention.[73] The Secretariat of the Basel Convention must be informed about any such agreement. Exports to Antarctica have been strictly prohibited.[74]

The transboundary movement of hazardous and other wastes which is not prohibited and which is in conformity with the general obligations, has to be carried out according to the Convention's regulatory system.[75] This system is

68. Article 4 (7) (a)
69. Article 4 (7) (c); Article 6 (9).
70. Article 4 (7) (b).
71. Article 4 (5).
72. Article 7.
73. Article 11.
74. Article 4 (6).
75. Articles 4 (1) (c) and 2 (f).

known as the *prior informed consent procedure* ('PIC procedure')[76] and establishes a global written notice and consent regime State parties are required to designate competent authorities to administer PIC procedure and inform one another through the Secretariat The state of export has to give notice in writing of any intended transboundary movement containing detailed information to the prospective states of import and transit to enable them to assess the nature and the risks involved in the intended movement The written consent of the importing state and all the transit states is needed before the movement actually commences The transit states which are not parties to the Convention have the same right as importing states The verification of the contents of the contract concluded between the exporter and the disposer is a mandatory requirement to ensure environmentally sound disposal

Any transboundary movement of hazardous or other wastes without following the PIC procedure has been declared as 'illegal traffic'[77] which would be a criminal offence [78] If illegal traffic is the result of conduct on the part of exporter or generator, the state of export must ensure that the wastes in question are either 'taken back' or if this is not practicable, are otherwise disposed of in accordance with the provisions of the Convention, within 30 days from the time the state of export is informed about illegal traffic. If it is the conduct of importer or disposer which is responsible for illegal traffic, the state of import has to ensure that wastes in question are disposed of in an environmentally sound manner, within 30 days from the time illegal traffic comes to its notice. If the responsibility can not be assigned either to the

76 Articles 6 & 7 and Annex V (A)
77 Article 9.
78 Article 4 (3)

exporter or generator or to the importer or disposer, the parties concerned or other parties as appropriate, should ensure, through co-operation, the environmentally sound disposal of the wastes. The Convention obliges each party to introduce appropriate national/domestic legislation to prevent and punish illegal traffic. The Secretariat may also be requested to identify cases of illegal traffic.

The Convention directs the parties to co-operate in adopting, as soon as practicable, a Protocol establishing appropriate rules and procedures for compensation for damage resulting from transboundary movement and disposal of wastes.[79] The Protocol on Liability and Compensation was signed in 1999 at the fifth Conference of the Parties.[80] The parties should co-operate in the dissemination of information, improvements in the environmentally sound management of wastes and prevention of illegal traffic.[81] They should also cooperate in the harmonisation of technical standards and practices, monitoring the effects of waste management on human health and environment, development and implementation of low-waste technologies, improvement of existing technologies, development of technical capacity and codes of practice and in assisting developing countries to implement their obligations as set out in Article 4.[82] The institutional mechanism for ensuring effective compliance of the provisions includes the establishment of the Conference of Parties[83] and a Secretariat.[84] The main functions of the Conference of the Parties are continuous evaluation and review of the

79. Article 12.
80. *See infra* Chapter VII, at ?.
81. Article 4 (2) (h).
82. Article 10.
83. Article 15
84. Article 16.

provisions and adoption of amendments and protocols. The Secretariat assists in identifying illegal traffic and relays all relevant information to the parties. It basically performs administrative and co-ordinating functions.

Although Basel Convention does not provide a perfect solution to the problem of transboundary movement of wastes, there is a consensus among most of the writers that it does address most of the relevant issues and is, therefore, a step in the right direction. Its effectiveness depends on strict implementation and enforcement by state parties.

It is important to note that originally, the Basel Convention allowed hazardous wastes to be exported from OECD to non-OECD countries for recycling but this 'recycling loophole' has now been eliminated. By an amendment in the Convention in 1995 (Decision III/1), the export of hazardous wastes for final disposal or recycling from OECD to non-OECD countries has been banned [85] The amendment is known as the 'Basel Ban'.[86] The amendment required member states of the OECD, EU and Liechtenstein to prohibit hazardous wastes intended for disposal to states other than members of OECD, EU and Liechtenstein. In other words, North-South shipments of hazardous waste intended for disposal have been banned. Moreover, shipments of hazardous wastes from the same group of countries intended for recovery or recycling to other states outside this group have also been banned.

The Basel Convention, therefore, emphasised on both notification to, and the consent of the government of the country of import in response to the

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85. Article 4A
86. *See* David Wirth, *Trade implications of the Basel Convention Amendment Banning North-South Trade in Hazardous wastes.* Int'l. Env't. Rep., 976 (September 4, 1996).

environmental and public health hazards associated with transboundary shipments of hazardous wastes. This approach has been accepted at international level not only with respect to exports of wastes, but also for hazardous pesticides and industrial chemicals. As regards 'Basel Ban', it may be submitted that both business and industry have not objected to the ban on waste intended for disposal but the portion addressing the ban on exports for recycling and recovery has proved to be quite controversial. The ban has eliminated the option of legal hazardous waste transactions between two groups of countries and thereby enhanced the possibility of illegal transactions. The persons who make millions of dollars through illegal traffic are not to be easily deterred by the ban. In this situation, the national mechanisms and infrastructures for the control and prevention of illegal traffic needs to be considerably strengthened, for example, by the adoption of criminal legislations as required by the Basel Convention itself.

2 7.2 *Lome IV Convention*

The Basel Convention has been criticised by some developing countries on the ground that it does not prohibit international trade in hazardous waste but merely provides a detailed tracking mechanism. Under such terms as 'prior informed consent', 'environmentally sound management', and 'adequate disposal facilities', it has legitimised the international hazardous waste game Due to its failure to ban the hazardous waste trade, many developing countries sought the protection of additional multilateral treaties, prohibiting the import of waste within their territories. Lome IV banned the direct and indirect export of any hazardous or radioactive waste from EC States to African, Caribbean

and Pacific (ACP) States. ACP States also agreed not to accept waste imports from any other State outside the EC.

The IV Lome Convention adopted at Lome (Togo) on 15 December 1989 is one of a series of conventions negotiated between EC and ACP countries. It entered into force on 1 September 1991. It bans the movement of hazardous wastes from EC to ACP countries.

Article 39 of Lome IV specifically addresses the issue of transboundary movements of hazardous wastes and obliges the contracting parties to make every effort to ensure that international movements of hazardous wastes and radioactive wastes are generally controlled. The definition of 'hazardous wastes' under Article 39 (3) is broader in scope than that provided under the Basel Convention since it includes ' radioactive wastes' also. The scope of wastes covered under the Lome IV is similar to that of the Bamako Convention.

Lome IV is basically a regional agreement within the meaning of Article 11 of the Basel Convention and is considered to be the first binding agreement between developed and developing countries prohibiting North-South traffic in hazardous and nuclear wastes. It was adopted only months after the Basel Convention but went beyond that so far as the scope of the wastes and stringency of the measures are concerned.

2.7.3 *Bamako Convention*

The Bamako Convention 1991 establishes a regional treaty regime for the African Continent and prohibits trade in waste. The Bamako Convention was

signed by all 51 members of Organisation of African Unity (OAU), except South Africa which was not a member of OAU at that time, in January 1991 in Bamako, Mali. It entered into force on 22 April 1998. Although to a large extent, the Bamako Convention incorporates a regime similar to the Basel Convention, there are certain important differences between the two Unlike the Basel Convention which permits trade in hazardous wastes subject to the principles of 'environmentally sound management', and 'prior informed consent', the Bamako Convention prohibits the import of all hazardous wastes into Africa It states that 'all parties shall take appropriate legal, administrative and other measures within the area under their jurisdiction to prohibit the import of all hazardous wastes, for any reason, into Africa from non-contracting parties. Such import shall be deemed illegal and a criminal act' [87] Although the prohibition is restricted to non-parties, the fact is that the treaty is only open for signature,[88] ratification,[89] and accession[90] by Member States of the OAU. It thus effectively prohibits imports from outside Africa

Bamako Convention adopts a wider definition of hazardous waste than that provided under the Basel Convention This definition includes 'radioactive wastes' and 'household wastes' including sewage and sewage sludges [91] Basel Convention excludes radioactive wastes and 'household wastes' come under the category of 'other wastes'. However this distinction is of little significance because under the Basel Convention, 'other wastes' are also subject to the same regime as 'hazardous wastes'.

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87 Article 4 (1).
88 Article 21.
89 Article 22.
90 Article 23.
91. Article 2.

The Bamako Convention incorporates a specific provision for the adoption of 'precautionary principle' through the application of clean production methods, rather than a permissible emissions approach based on assimilative capacity assumptions e.g. assumptions about the capacity of the environment to absorb a certain level of pollution [92] This is a more progressive approach than that adopted by the Basel Convention which is based on scientifically proven harmful substances only Moreover, the procedural requirements of notification are much tighter. A specific notification, as against general notifications, is required for each and every shipment,[93] and the transit states are required to disallow transboundary movements until written consent has been received [94] In case of illegal traffic, the Bamako Convention also requires the exporter or generator, and ultimately the exporting state to ensure the return of waste in question [95] Like the Basel Convention, the Bamako Convention is administered by its own Conference of Parties[96] and Secretariat [97]

The Convention bans the import of wastes into African States but permits movements of waste between African States, subject to certain restrictions Despite its ban on the import of hazardous waste from outside Africa, Bamako does not ban the importation of waste generated in one African State to another African State. Each State has to pass domestic laws requiring generators to report their waste generation and shipments to the Secretariat There is strict joint and several liability for the release of hazardous wastes [98]

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92 See Article 4 (3) (f)
93 Article 6 (6)
94 Article 6 (4).
95 Article 9 (3).
96 Article 15.
97. Article 16
98 Article 4(3)(b)

The members of OAU favoured a complete ban on the export of hazardous wastes to developing countries. These states argued that Basel convention had failed to address adequately three important problems,[99] namely:

(1) how to control shipments of mixed waste;

(2) how to meet the situation where an importing state fails to adequately dispose of the waste; and

(3) how to prevent forgery and bribery resulting from Basel's notice and consent provisions.

For the effective enforcement of the Bamako Convention, following is laid down:

1) Each party must create its own national body to act as a watchdog or 'Dumpwatch' as it is termed in the Convention; and

2) Violators of the ban on extra-continental imports of waste and their accomplices who plan, carryout or assist illegal imports are subject to criminal penalties.

It has been estimated that between 300-500 million tons of hazardous waste is generated annually, with over 90 percent originating in industrialised nations.[100] There are no accurate figures on the volume of hazardous wastes transported from industrialised nations to emerging and developing economies because of illegal dumping activities and the lack of facilities to monitor transboundary movements of such wastes. The Basel Convention and the Bamako Convention complement one another and seek to prevent illegal dumping. With both Conventions now in force, and with the 'Basel Ban',

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99. John Ovink, *Transboundary Movement of Hazardous Waste. the Basel and Bamako Conventions: Do Third world CountriesHave a Choice?*, 13 Dick. J. Int'l.. L. 281, 285.
100. *UNEF Press Release*, 27 February 1998.

adequate and effective mechanisms have to be established for their compliance and implementation.

2.7.4 *Agenda 21*

Chapter 20 of Agenda 21[101] required the international community to ratify and implement Basel Convention and Bamako Convention as well as related protocols and also to eliminate the export of hazardous wastes to countries which prohibit the import of such wastes such as contracting parties to the Bamako Convention, the IV Lome Convention or other relevant Conventions. Chapter 20 recognised that 'the promotion and strengthening of international cooperation in the management of transboundary movements of hazardous wastes'[102] and 'prevention of illegal international traffic in hazardous wastes'[103] are issues of major concern. While concluding, the proposed activities in these areas may be noted since these are of great significance. As regards management of transboundary movements of hazardous wastes, the following are recommended to be undertaken by governments:

- to promote and strengthen international cooperation in the management, control and monitoring and to apply the 'precautionary approach';
- to harmonize the procedures and criteria used in various international and legal instruments;
- to ban or prohibit the export of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

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101. *supra* note 6.
102. Programme area (C).
103. Programme area (D).

- to incorporate notification and control procedures under Basel Convention and relevant regional conventions, like Bamako Convention, into national legislation;
- to ratify and implement Basel and Bamako Conventions and related protocols;
- to develop guidelines for identification, recovery, recycling and safety standards including monitoring and surveillance of transboundary movements; and
- to provide financial assistance in case of emergency situation.

The prevention of illegal international traffic in hazardous wastes will benefit the environment and public health in all countries, particularly developing countries. It would also make the Basel Convention and regional international instruments, such as the Bamako Convention and the IV Lome Convention more effective. Illegal traffic may cause serious threats to human health and the environment and impose abnormal burden on the countries that receive such shipments. Effective prevention requires action through effective monitoring and imposition of appropriate penalties. Following activities are recommended at the governments' level:

- to reinforce national capacities to detect and halt any illegal attempt and to strengthen information alert system;
- to assist the countries that suffer the consequences of illegal traffic within the framework of Basel Convention;
- with the cooperation of the United Nations and other relevant organisations, to adopt and implement legislation to prevent illegal import and export of hazardous wastes and to ensure compliance of such legislation; and

- to strengthen institutional and regulatory capacities of developing countries.

2.8 Conclusion

The international, regional and national policies on the control and management of hazardous wastes, as reflected by the London Dumping Convention, the Basel Convention, Chapter 20 of Agenda 21, the Lome IV Convention, Bamako Convention as well as U.S. and U.K. strategies highlight the strong preference for elimination or disposal at source of toxic, persistent or bioaccumulative waste. Where this is not possible, a regime of regulation, monitoring, prior environmental impact assessment or prior consent of the state at risk comes into play. Basically an attempt has been made to balance environmental concerns and economic development by regulation avoiding outright prohibition. In this regard, the special needs of developing countries with respect to industrialisation have also been acknowledged. In the regulation of dumping at sea and the transboundary movement of hazardous wastes a 'precautionary approach' has been adopted and implemented at international level. This has led to the greater protection of developing countries which are at the highest risk from these practices. Adoption of clean production technologies and the environmentally sound management of hazardous wastes have been proclaimed. Adoption of clean production technologies is primarily a method of implementing the 'precautionary principle'. The principle implies a willingness to act in cases of potential harm even though scientific proof is lacking.

The next section seeks to examine the issues relating to regulation of hazardous chemicals in international arena.

II- Hazardous Chemicals

Apart from hazardous waste, the other substance which has received international attention is hazardous chemicals. There are basically two reasons advanced for taking international action on hazardous chemicals. The first concerns the so-called 'level playing field' argument. The differences in regulatory costs confronting industry in different countries favour companies in countries with less rigorous regulatory climates, and incite them to move their production to such countries. The second concerns transboundary effects of chemicals. 'Releases of chemicals do not respect national borders'.[104]

The nature and degree of regulatory control as well as resources available for implementation and enforcement in various countries differ significantly Developing countries, particularly, have failed to guard themselves against the dangers posed by hazardous chemicals which have been banned or the use of which is severely restricted in developed countries. Many of the developing countries neither have regulatory mechanisms to implement controls nor have the capacity to assess the information relating to a particular pesticide or chemical. The key problem is ignorance.

The lack of regulatory system in developing countries is accompanied by poor handling, unsafe storage practices, use of high-risk techniques, and improper labeling and packaging. Labels that provide warnings and directions for safe use may not contain complete information or may not be read or understood by the workers who handle them. Workers are ill equipped, careless and illiterate and are not familiar with the necessary protective procedures in the

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104. James E. Brydon, Victor Morgenroth & Richard Sigman, *Chemical Risk Reduction Activities in the OECD*, Int'l. Env't. Rep., 600 (1993).

mixing and application process. Moreover, many developing countries lack medical and other infrastructures to respond to emergencies.

2.9 Role of OECD in Chemicals' Management

The initial work on chemical management at the international level took place in the OECD. It has an Environmental Health and Safety Division within which the OECD Chemicals Programme is located. A Chemicals Group was first established in 1971 and its work was expanded in 1978 with the creation of a Special Programme on the Control of Chemicals. The programme developed harmonised chemical testing and hazard assessment procedures.[105]

However, with the appeal of United Nations Conference on Environment and Development (UNCED) for greater activity and co-ordination of risk management of chemicals, at Rio de Janeiro in 1992, the work moved outside the OECD to the International Programme on Chemical Safety (IPCS), the International Forum on Chemical Safety (IFCS) and UNEP, since the Governing Council approved in May 1995 the commencement of negotiations to develop a convention on *prior informed consent* for trade in toxic chemicals.

2.10 FAO Code of Conduct

Simultaneously the problem of pesticides has been picked by another international institution, the United Nations Food and Agricultural Organization (FAO). In International arena the FAOs 'International Code of Conduct on the Distribution and Use of Pesticides', 1985[106] (the FAO Code of Conduct) is considered to be the first international code adopted to reduce the

105. OECD, The OECD Chemicals Programme, 12 (Paris, 1993).
106. U.N. DOC. M/R8130, E/8.86/1/ 5000 (1986)

hazards associated with the international use of pesticides. Though only voluntary, it was designed to aid countries and provide interim protection until they implement national regulations on the use of pesticides. It provided the first global standard for the sale and use of pesticides.

Under the Code, voluntary responsibilities are allocated among government, industry and the public. It provides that 'Governments' have the overall responsibility and should take the specific powers to regulate the distribution and use of pesticides in their countries'.[107] Manufacturers and distributors of pesticides should follow Code provisions in the manufacture, distribution, labeling and advertising of pesticides, especially in countries without legislation or regulation, and should take special care to ensure safe and effective use of the product world wide. To assess compliance with the Code, the FAO issued a questionnaire in 1988. The results were distressing. Of the 115 responding countries (mostly developing), 'half did not have legislation to control pesticides, and 84 percent were unable to control potentially hazardous pesticides according to international standards.'[108]

The principle of '*prior informed consent*' (PIC) gives the importing countries an opportunity to refuse shipments of pesticides banned or severely restricted in exporting countries. Early drafts of the Code had provided for PIC for each and every shipment, but pressure from industry and a number of producing countries resulted in its deletion. The U.S and the U.K in the early 1980s were opposed to the concept of PIC. Developing countries voiced their

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107. Article 3.
108. James Colopy, *Poisoning the Developing World: The Exportation of Unregistered and Severely Restricted Pesticides from the United States*, 13 UCLA J. ENVT'L.L. & POL'Y 167,173 (1995).

disappointment regarding the lack of PIC procedures. In response to these concerns, the FAO adopted a resolution in November 1987 that PIC should be incorporated into the Code within two years. In November 1989,the FAO amended the Code to adopt the principle of PIC. It provided that:

> Pesticides that are banned or severely restricted for reasons of health or the environment are subject to the Prior Informed Consent procedure. No pesticide in these categories should be exported to an importing country participating in the PIC procedure contrary to that country's decision made in accordance with the FAO operational procedures for PIC.[109]

The Code provides an eight step process in which FAO plays a central organisational role. According to these steps, exporting and importing states should participate in the PIC process. A designated national authority is required to report pesticide bans, refused registrations or severe restrictions to the FAO. In response, FAO issues a "PIC Decision Guidance Document" which includes information on the chemical and physical composition of the pesticide as well as its uses, possible source of exposure, its toxicity and regulatory status in other countries. The document is then sent to participating countries, which have ninety days to decide whether to ban imports of the pesticide. The status quo is maintained if the importing country does not respond within 90 days. A database is then maintained from which countries can monitor the import status of chemicals in each country.

However, FAO Code of Conduct was criticised by developing countries on the ground that it was too weak, non-binding and voluntary, with no enforcement mechanisms and no provisions for technical assistance to developing countries for monitoring or enforcement. Its PIC procedure applies only to pesticides

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109. Article 9 (7).

that have been banned or severely restricted in five or more countries and so many potentially toxic chemicals were not reviewed. In spite of these shortcomings, both industry and many signatories to the Code regarded it only as a first step, and the next development i.e. the London Guidelines, explicitly sought to address these shortcomings.[110]

2.11 London Guidelines

The United Nations Environment Programme (UNEP) is an autonomous unit within the United Nations Secretariat which was established after the U.N. Conference on Human Environment, 1972 held at Stockholm.[111] It is located in Nairobi, Kenya. It was ineffective at international arena during its first decade and the pace of progress since Stockholm Conference and its adopted Plan of Action was criticised.[112] Whatever may be the reasons for its ineffectiveness during the first decade, UNEP became much more activist in the mid 1980s, and since then it has been increasingly involved in global standard setting and policy initiatives. It was central to the Vienna Convention for the Protection of the Ozone Layer, 1985; Montreal Protocol on Substances that Deplete Ozone Layer, 1987; the Basel Convention, 1989 and the United

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110. DAVID HUNTER, JAMES SALZMAN, DURWOOD ZAFLKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 872, 873 (2d ed. 2001).
111. 11 I.L.M. 1416 (1972). The Conference adopted an Action Plan of 109 recommendations and a Declaration of 26 principles. UNEP was constituted to ensure implementation of these principles. Principle 6 of the conference is worth mentioning. It provides that 'the discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystem...'
112. The annual core budget of UNEP is only about $ US 20 million. It receives another $ US 50 million from extra budgetary sources, but that depends upon the generosity and priorities of member states. In 1994, UNEP had a total budget of only about $ US 75 million. *See* BRANISLAV GOSOVIC, THE QUEST FOR WORLD ENVIRONMENTAL CO-OPERATION: THE CASE OF THE UN GLOBAL ENVIRONMENTAL MONITORING SYSTEM 236-43 (1992).

Nations Framework Convention on Climate Change, 1992. In consequence, its activities began to receive greater support from the U.N. General Assembly.

UNEP had decided in 1982 to establish a working group of experts to draft 'Guidelines for the Exchange of Information on Potentially Harmful Chemicals, in Particular Pesticides, in International Trade.' When it first met in 1984, the G-77 bloc (developing countries) pleaded for PIC, but it was not until 1987 meeting that the dominance of the OECD guiding principles was broken by the Governing Council's adoption of London Guidelines for the Exchange of information on Chemicals in International trade.[113] The London guidelines should be viewed as complementary to the FAO Code, expanding the scope of coverage to include hazardous chemicals not covered in the Code. Put simply, the FAO Code focuses on pesticides; the London Guidelines on industrial chemicals.

The purpose of Guidelines was to allow countries access to information on hazardous chemicals in order to facilitate informed choices regarding their importation, handling and use. The Guidelines apply to hazardous chemicals, including pesticides. The Guidelines specifically excluded pharmaceuticals, radioactive materials, small quantities for research and personal use, and food additives. They are non-binding, merely establishing a minimum set of standards that countries should attempt to achieve. The Guidelines call on states of export and import to work with UNEP and FAO in creating a formal mechanism of information exchange on chemicals involved in international trade.

The U.S.,U.K. and Germany kept PIC out of London Guidelines, but as a result of Pesticides Action Network lobbying within G-77, the UNEP

113. U.N. Doc. UNEP/GC, 14/17, Annex IV (1987).

Governing Council pledged that PIC would be added at the next scheduled council meeting in May, 1989 and this was done. Voluntary PIC procedure was added in 1989 to control the import of chemicals that have been banned or severely restricted. A chemical that is banned or severely restricted in an exporting country because of its threat to human health or the environment should not be shipped to an importing country over that country's objection. Like the FAO Code, the PIC procedure reinforces state sovereignty in determining its own analysis of the risks and benefits associated with chemicals it chooses to allow into the country. The U.S., recognising that the introduction of PIC was inevitable, played an active role in developing the concept further. UNEP played the lead role

The International Register of Potentially Toxic Chemicals (IRPTC) was established by UNEP in 1976 in Geneva. It is considered to be the first institution to collect and process information on hazardous chemicals. It also administers the PIC procedure. It now operates a global network for the exchange of information on chemicals between countries, regions and international organisations. The network consists of 138 members from 129 countries. Its purpose is to make it easier for countries to obtain existing information on the production, distribution, release, disposal and adverse effects of chemicals.

The PIC procedures under the amended London Guidelines[114] are essentially the same as under the FAO Code of Conduct. A country seeking to participate in the PIC procedure notifies UNEP and FAO of the import restrictions it

114. *See also* UNEP's *Code of Ethics on the International Trade in Chemicals, 1994* which is said to be complementary to the amended London Guidelines. The original document can be found in W.P. 5.1 or WW 6.0.

wishes to place on a specific chemical. Once UNEP, through IRPTC identifies the chemical as 'banned' or 'severely restricted' under the FAO Code and the amended London Guidelines, a 'decision guidance document' is circulated to other participating countries, who may then notify IRPTC and FAO of their decisions concerning the import of the chemical. The country's decisions are then compiled and disseminated to all participating governments. IRPTC also maintains chemical data profiles of nearly 10,000 chemicals based on their effects on human health and the environment. The data profiles contain information on a particular chemical's production and consumption, environmental and toxicological aspects as well as risk management information.

The FAO Code of Conduct and London Guidelines assisted countries in developing their own national rules and procedures. Their main aim was to promote transparency in the management of potentially hazardous chemicals through the exchange of information and to encourage shared responsibility between exporting and importing states for the management of industrial chemicals and pesticides. In 1989, both the FAO Code of Conduct and London Guidelines were amended to incorporate PIC Procedure. The amendment required the participating countries to exchange information through the implementing agency, as opposed to the previous bilateral exchange of information between countries. This provided the process with a degree of formality, enabling better control over the flow of information.

The amended FAO Code and London Guidelines, therefore, provided detailed requirements for PIC procedures, but as noted above, entirely on the voluntary basis. There was a demand for a binding legal instrument in this regard, although it was doubtful whether formalising PIC would help the developing

countries more than the voluntary PIC process did. Many of them lacked an accountable domestic policy process to govern the import and distribution of chemicals. The London Guidelines might have been 'soft law' PIC, but at least they required a designated National Authority to be named, adding transparency to decisions and opening them up for contestation by environmental groups and agencies. It was a political rather than a legal accountability process which would perhaps function better without the 'chilling effects' of a legal convention.[115]

However, UNEP decided otherwise and began negotiations to develop a legally binding PIC instrument. The mandate provided by Chapter 19 of Agenda 21 required that the PIC procedure as applied to chemicals under the voluntary joint UNEP/ FAO mechanism should be brought into a legally binding form [116] The negotiation process in this regard took place under the joint responsibility of UNEP and FAO. Both these organisations established the International Negotiation Committee (INC) for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. This negotiating group held five sessions between March 1996 and March 1998. Some 100 countries as well as a number of intergovernmental and non-governmental organisations active in the area of chemicals management participated in the negotiations. Finalised at the 5th meeting of the INC, the Convention was formally adopted and opened for signature at a Conference of Plenipotentiaries convened by UNEP and FAO and held in Rotterdam, Netherland on 10 and 11 September, 1998, at the invitation of the

115. Robert L. Paarlberg, *Managing Pesticide Use in Developing Countries', 346 in* PETER M HAAS, ROBERT, O. KEOHANE & MARC A. LEVY (eds.), INSTITUTIONS FOR THE EARTH: SOURCES OF EFFECTIVE INTERNATIONAL ENVIRONMENTAL PROTECTION (Cambridge, 1993).
116. Chapter 19(38).

Government of the Netherlands[117] It is known as 'the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade'[118] (Rotterdam Convention) It provides more complete information to importing countries on the health and environmental risks associated with the use of hazardous chemicals and pesticides

2.12 International Programme on Chemical Safety

Prior to discussion on the provisions incorporated in the Rotterdam Convention, it is important to note that the International Programme on Chemical Safety (IPCS) was established in the backdrop of Stockholm Conference, 1972 In 1980, the World Health Organization (WHO), International Labour Organization (ILO) and UNEP agreed to co-operate to allow IPCS to co-ordinate work on health, labour and environmental aspects of chemicals However, there are intense bureaucratic rivalries in the international chemicals arena When WHO and ILO tried to establish IPCS without the cooperation of industry and FAO, the project floundered [119] WHO and ILO had tried to use the IPCS to dilute FAO's authority over pesticides [120] WHO was included in PIC negotiations and retained a strong preference for expanding the competence and reach of IPCS to reduce the special status of pesticides and threaten FAO's claim to lead pesticide regulation [121]

IPCS has worked closely with the OECD and provides evaluated data which are intended to form a basis on which relevant national authorities can establish policy These include Environmental Health Criteria (EHC)

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117 Katharina Kummer, *Prior Informed Consent for Chemicals in International Trade The 1998 Rotterdam Convention*, 8 RECIEL, 323-24 (1999)

118 UN DOC UNEP/FAO/PIC/INC 5/3 Annex I (17 March 1998) The Convention website is at <http //www pic int/>

119 ROBERT BOARDMAN, PESTICIDES IN WORLD AGRICULTURE THE POLITICS OF INTERNATIONAL REGULATION 126-8 (London, 1986)

120 *supra* note 115, at 328

121 *Id* at 328-9

documents which are hazard statements to assist risk evaluation for human health and the environment at the national level. EHCs have been completed for many chemicals including a number of metals. IPCS Health and Safety Guides are short documents summarising toxicity information in non-technical language and providing advice on safe handling and storage, first aid and so on. There has been long standing cooperation between IPCS and scientific bodies such as the International Life Sciences Organisation, the chemicals industry, professional scientific and technical societies and workers' federations and associations.

2.13 United Nations Conference on Environment & Development

The international agenda on hazardous chemicals was given an added impetus in 1992 by the United Nations Conference on Environment & Development (UNCED),[122] which in Principle 12 noted that environmental standards applied by some countries might be inappropriate in other countries, especially developing countries. UNCED, therefore called for trade and environmental policies which are mutually supportive, transparent and compatible with international obligations. Principle 14 of the UNCED provides that 'states should effectively cooperate to discourage or prevent the relocation and transfer to other states of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.'

2.14 Agenda 21

The UNCED adopted Agenda 21 as a programme for action.[123] Chapter 19 of Agenda 21 dealing with 'Environmentally Sound Management of Toxic Chemicals, Including Prevention of Illegal International Traffic in toxic and

122. UN Doc. A/CONF. 151/5/Rev. 1 (1992), *reprinted in* 31 I.L.M. 874, 878 (1992).
123. *supra* note 6 .

Dangerous Products', stated that risk management activities are primarily the responsibility of national governments but international action is needed for problems which have international implications. Chemical risks do not respect national boundaries. It identified the following programme areas for environmentally sound management of chemicals:

(a) Expanding and accelerating international assessment of chemical risks;

(b) Harmonization of classification and labeling of chemicals;

(c) Information exchange on toxic chemicals and chemical risks;

(d) Establishment of risk reduction programmes;

(e) Strengthening of national capabilities and capacities for management of chemicals;

(f) Prevention of illegal international traffic in toxic and dangerous products.

Chapter 19 provides that successful implementation of above stated programmes depends upon intensive international work and coordination as well as identification and application of technical, scientific, educational and financial means. Collaboration on chemical safety between UNEP, ILO and WHO in the IPCS should be the nucleus for international cooperation. The work of the OECD, FAO and the European Union should be coordinated. Intergovernmental mechanisms should also be established where ever appropriate. Of the six programme areas proposed in the Chapter, the assessment is intended to progress at the international level while management of chemicals is intended to occur at national level. In view of General Assembly Resolution 44/226 of 22 December, 1989, each regional commission should contribute to the prevention of illegal traffic in toxic and dangerous products.

In addition, Chapter 19 of Agenda 21 recommended the adoption of London Guidelines, PIC procedures, precautionary principle, General Agreement on Tariffs and Trade (GATT) framework and Awareness and Preparedness for Emergencies at Local Level (APELL) programme of UNEP by the governments. The role of IPCS should also be enhanced. OECD member countries should establish or strengthen national risk reduction programmes and that governments should 'undertake concerted activities to reduce risks for toxic chemicals, taking into account the entire life cycle of the chemicals.' National capabilities and capacities should be strengthened through adequate legislation, information gathering and dissemination, capacity for risk assessment and interpretation, establishment of risk management policy and its implementation and enforcement, rehabilitation of contaminated sites and poisoned persons, effective education programmes and capacity to respond to emergencies.

2.15 Intergovernmental Forum on Chemical Safety

The recommendation that intergovernmental mechanisms should be established was given effect by the establishment of Intergovernmental Forum on Chemical Safety (IFCS). Sweden was elected president and an intercessional group was established with 26 members. The IFCS was expected to identify priority actions in order to carry out the UNCED strategy. Specified actions were to be completed by the time of 1997 UN General Assembly special session, held to review the results of UNCED. On an interim basis the Secretariat of IFCS was located along with the IPCS and administered through WHO. The Commission on Sustainable Development,[124]

124. On the Commission for Sustainable Development, *see* Chris Mensah, *The United Nations Commission on Sustainable Development*, in WERKSMAN (ed.), GREENING INTERNATIONAL INSTITUTIONS 23 (London, 1996).

established to oversee implementation of Agenda 21, gave IFCS strong support and called for a close association between IPCS and IFCS. It was considered very important that IPCS's work should be the best possible science and that IFCS should work on policy considerations. Every attempt was made to keep the technical work separate from policy work. This was done to ensure the outside world that IPCS's technical evaluations were independent and uninvolved with commercial considerations.

2.16 The Rotterdam Convention

As noted earlier, the FAO Code and amended London Guidelines developed and incorporated a voluntary system for the enforcement of the concept of PIC. A voluntary system inherently lacks a strong mechanism for monitoring compliance or enforcing the commitments of the parties. This system was eventually transformed into the existing legally binding system through the instrumentality of Rotterdam Convention. Through the Rotterdam Convention, the management of industrial chemicals and pesticides has been subjected to formal legal regulation at the global level. The object of the Convention is to protect human health, including the health of consumers and workers, and the environment against potentially harmful impacts from certain hazardous chemicals and pesticides in international trade[125] and to promote shared responsibility, cooperation and exchange of information among parties in international trade to ensure environmentally sound use of hazardous chemicals.[126]

125. The Preamble of Rotterdam Convention.
126. Article 1.

To carry out these objectives, the Convention recalls the provisions of Chapter 19 of Agenda 21 and gives effect to the work of UNEP and FAO in the operation of the voluntary PIC procedure as set out in the amended London guidelines and FAO Code of Conduct. The Convention takes into account the special requirements of developing countries, particularly the need to strengthen their national capacities for the management of chemicals through transfer of technology, providing financial and technical assistance and cooperation among Parties. Promotion of good management practices and adequate packaging and labeling during export have to be ensured.

The provisions of Rotterdam Convention apply to:[127]

(a) Banned or severely restricted chemicals; and

(b) Severely hazardous pesticide formulations.

The Convention bans the export of above mentioned chemicals as listed in Annex III, unless the importing country has given its prior consent. Chemicals are listed in Annex III when they have been 'banned' or 'severely restricted' in the exporting country. Banned chemicals include those that have been refused approval for first time use or ' withdrawn by industry from the domestic market' in order to protect human health or the environment.[128] The definition of 'severely restricted' includes chemicals with clear evidence of human or environmental concern.[129] A 'banned' or 'severely restricted' chemical may be added to Annex III if the Secretariat receives at least one notification from each of two designated PIC regions that a particular chemical meets the requirements of Annex I. The composition of PIC regions

127. Article 3.
128 Article 2(b).
129 Article 2(c).

was left to the Conference of the Parties to decide at its first meeting. The Secretariat forwards the matter to Chemical Review Committee to decide on the basis of such notifications and in accordance with the criteria set out in Annex II. The Chemical Review Committee then recommends to the Conference of the Parties to list the chemical in Annex III and make it subject to the PIC procedure.[130]

The Convention also allows a developing country which is experiencing problems in its territory caused by a severely hazardous pesticide formulation, to propose to the Secretariat the listing of that formulation in Annex III.[131] 'Severely hazardous pesticide formulations' are pesticides that produce severe environmental or health effects within a short period from the time of exposure.[132] Any such proposal by a developing country should contain the information as required by Part 1 of Annex IV, including formulation's active ingredients, description of incidents relating to the formulation as well as its adverse effects and measures taken in response to such incidents. The Secretariat shall verify the contents of the proposal and collect additional information as set out in Part 2 of Annex IV,[133] including whether other countries have applicator or handling restrictions and whether any incidents have been reported in other countries. The Secretarial shall forward the proposal and the related information to the Chemical Review Committee which shall review the information in accordance with the criteria set out in Part 3 of Annex IV. The Chemical Review Committee then recommends to the Conference of the Parties to list the formulation in Annex III and make it

130 Article 5(5) & (6).
131 Article 6(1).
132. Article 2(d).
133. Article 6(2) & (3).

subject to the PIC procedure.[134] There is a provision for removal of chemicals from Annex III also.[135] If a party submits to the Secretariat information that was not available at the time when the decision to list a chemical in Annex III was taken and that information indicates that its listing may no longer be justified, the Secretariat shall forward this information to the Chemical Review Committee which may recommend the removal of chemical from Annex III.

The Convention requires each Party to implement appropriate legislative or administrative measures to ensure timely decisions and responses with respect to the import[136] and export[137] of chemicals listed in Annex III. These decisions and responses have to be in accordance with the prescribed procedure. There are provisions for export notification and its acknowledgement by the importing Party[138]; information to be accompanied with exported chemicals (with regard to risks or hazards to human health or the environment);[139] exchange of required information among Parties;[140] establishment and strengthening of national infrastructures and institutions for the effective implementation of the Convention;[141] and cooperation in promoting technical assistance to developing countries so as to enable them to implement the Convention.[142] For proper enforcement of the provisions, the Convention establishes a Conference of the Parties[143] and a secretariat[144] to perform the

134. Article 6(4) & (5).
135. Article 9.
136. Article 10.
137. Article 11.
138. Article 12.
139. Article 13.
140. Article 14.
141. Article 15.
142. Article 16.
143. Article 18.
144. Article 19.

functions assigned to them As of 20 December 2002, 37 Parties had ratified the Convention [145] Fifty states must ratify for the Convention to enter into force

The above discussion reveals that the development of international law regarding regulation of chemicals, including their transboundary movement has travelled from non-binding to binding international guidelines It mainly focuses on the development of PIC procedures However, simply providing information to some developing countries may not be sufficient to ensure an informed response Institutional capacity to assess the data is necessary for which it may be submitted that developed countries should provide technical and financial assistance The industry also should bear some responsibility by helping in building institutional capacity in countries where they operate

2.17 Right to know

PIC is basically one form of right-to-know laws which require disclosure of chemical hazard information to populations at risk The right to know is important for two reasons [146]

(1) In any public policy approach, public protection should be predominant And

(2) Individual and community should have right to autonomy and self-determination

A right-to-know instrument that is becoming widely adopted is known as a 'pollutant release and transfer registry' The registry provides a record of industrial releases and emissions For example the registry in the U S is called

145 *Monocrotophos Added to Rotterdam Convention*, 6 UNEP Chemicals Newsletter, 3 (2002)

146 Gary Rischitelli, *Developing a Global Right to know*, 2 ILSA J Int'l & Comp L 99, 100-110 (1995)

the Toxic Release Inventory (TRI) and has been remarkably effective in reducing industrial emissions.[147] EPA has listed over 650 chemicals that facilities with ten or more employees must report annually. In 1993, manufacturers reported releases of 2.8 billion pounds of listed chemicals. Almost half of the releases came from the chemical industry.[148] Since the advent of TRI, chemical manufacturers have reduced their TRI emissions by 68%.[149] The TRI programme is generally credited with substantial reduction in emissions because companies are eager to avoid bad publicity from being seen as a 'big polluter'.

2.18 The POPs Convention

The essence of a binding PIC regime, as reflected by the Rotterdam Convention, is to restrict the export of certain listed chemicals and pesticides if the importing country does not give consent. It does not require a complete ban on the trade of certain substances and elimination of their production or use. The possibility of developing an international legal instrument which recommends the phasing out of certain chemicals over time and then their complete elimination, has been achieved by the adoption of the Stockholm Convention on Persistent Organic Pollutants, 2001[150] (the POPs Convention). The Convention is aimed at reducing and/ or eliminating the emissions and discharges of persistent organic pollutants (POPs). It adopts the precautionary

147. *See* 42 U.S.C. 11023.
148. Glenn Hess, *Toxic Releases*, Chemical Marketing Reporter, June 26, 1995.
149. For details of emissions, see <http://www.epa.gov/triexplorer/>.
150. 40 ILM 532 (2001). For a regional agreement on the issue, see the Convention on Long-range Transboundary Air Pollution (LRTAP) Protocol on POPs. The LRTAP Protocol on POPs was signed on 25 May, 1998 and its provisions played an important role in guiding the shape of the POPs Convention.

approach as set forth in Principle 15 of the UNCED[151] to carry out the objective of protecting human health and the environment from POPs.[152]

POPs are synthetic chemical substances with unique and harmful characteristics. They pose severe risks to human health and the environment due to their toxicity, their persistence, their ability to travel long distances on air and water currents, and their tendency to bioaccumulate in food chains. They are 'worst of the worst' of toxic substances and are highly toxic to wildlife and humans. The POPs Convention recognised that POPs possess toxic properties, resist degradation, bioaccumulate and are transported, through air, water and migratory species, across international boundaries and deposited far from their place of release. They accumulate in terrestrial and aquatic ecosystems and create serious environmental and health concerns. The Convention recognised the importance of developing and using environmentally sound alternative processes and chemicals as well as the contribution that the private sector and NGOs can make in achieving the reduction and/or elimination targets. It also recalled the pertinent provisions of Rotterdam Convention, Basel Convention (including regional agreements developed within the framework of its Article 11) and UNCED and Agenda 21.[153] Agenda 21 urged governments to ' adopt regulatory and non-regulatory measures to identify and minimise exposure to toxic chemicals, by replacing them with less toxic substitutes, and ultimately phasing out the chemicals that pose unreasonable and otherwise unmanageable risks to human health and the

151. Principle 15 of UNCED, 1992 proclaims that 'in order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'
152. Article 1.
153. The Preamble.

environment, and those that are toxic, persistent, and bio-accumulative and whose use can not be adequately controlled.[154] In 1997, the UNEP Governing Council adopted Decision 19/13c which finally set out the negotiation mandate by providing in Paragraph 4 that 'immediate international action should be initiated to protect human health and the environment through measures which will reduce and/or eliminate, as further elaborated in the Annex to the present decision, the emissions and discharges of the twelve POPs specified in Governing Council Decision 18/32 and, where appropriate, eliminate production and subsequently the remaining use of those POPs that are intentionally produced.' The mandate of UNEP Decision 19/13c actually resulted in the adoption of POPs Convention by the international community. As of 31 December 2002, 151 states had signed the Convention but only 24 had ratified.[155] A minimum of fifty states must ratify for the Convention to enter into force.

The POPs convention regulates the POPs in three categories, namely, pesticides, such as DDT; industrial chemicals (intentional by-products), such as PCBs; and hazardous wastes (unintentional by-products) such as chlorinated dioxins and furans. The Convention requires an immediate prohibition of eight of the 'dirty dozen' chemicals, namely, aldrin, chlordane, dieldrin, endrin, heptachlor, mirex, hexachlorobenzane and toxaphene. It bans the production and use of intentionally and unintentionally produced POPs, where ever possible. As regards DDT, a compromise approach has been resorted to which severely restricts its use with the exemption for developing countries to use the chemical to combat malaria. The restricted use of PCBs in

154. Chapter 19(49).
155. *Stockholm Convention- Intergovernmental Negotiating Committee (INC) 6 Proves Decisive, supra* note 145.

power generating equipments has been permitted with the desire to find out PCB free alternatives by the year 2025. It also requires the Parties to take steps to reduce the use of, and ultimately eliminate dioxins and furans. The Convention requires the Parties to take legal and administrative measures to eliminate the production and use of chemicals listed in Annex A and restrict the production and use of chemicals listed in Annex B. The import and export of a particular listed chemical is permitted only for the purpose of environmentally sound disposal or under specific exemption granted to a Party, after taking into account relevant international PIC instruments. The export of a chemical to a non-Party is also permitted provided the importing state provides an annual certification and is committed to protect human health and the environment by taking necessary measures to minimise or prevent releases.[156] A Register is to be maintained by the Secretariat[157] for the purpose of identifying the Parties that have specific exemptions to use the chemical listed in Annex A or Annex B. The entries in the Register are subject to review by the Conference of the Parties.[158] The Parties are required to take measures to reduce or eliminate releases from unintentional production e.g. releases from anthropogenic sources of each of the chemicals listed in Annex C. For this purpose, the development of an action plan, the use of best available techniques and best environmental practices have been envisaged.[159] Parties are also required to reduce or eliminate releases from stockpiles and wastes contaminated with chemicals listed in Annexes A, B or C and to ensure that they are managed in a manner protective of human health and the environment. Wastes, including products and articles upon becoming wastes,

156. Article 3.
157. Established under Article 20.
158. Article 4. The Conference of the Parties is established under Article 19.
159. Article 5.

are to be handled, collected, transported and stored in an environmentally sound manner and are to be disposed of in such a way that POP content is destroyed. When destruction or irreversible transformation does not represent the environmentally preferable option, they are to be disposed of in an otherwise environmentally sound manner in accordance with international rules, standards and guidelines. It is important to note that the Convention does not permit disposal operations that may lead to recovery, recycling, reclamation, direct use or alternative uses of POPs.[160] Each Party has to develop an implementation plan to carry out its obligations under the Convention. The plan is subject to review on a periodic basis and in a manner specified by the Conference of the Parties.[161]

The Convention allows a Party to submit a proposal to the Secretariat for listing a chemical in Annexes A, B and / or C. The proposal ought to contain information specified in Annex D. After verification, the Secretariat is expected to forward the proposal to POPs Review Committee. On the basis of 'risk profile' and 'risk management evaluation', the Committee may recommend to the Conference of the Parties the listing of the chemical in Annexes A, B and / or C. The Conference of the Parties has to take a decision regarding listing of the chemical in Annexes A, B and/or C, in a precautionary manner and after taking into account the recommendations of the POPs Review Committee.[162] The criteria for listing a chemical in Annexes A, B and/or C has been given in Annexes D, E and F.

160. Article 6.
161. Article 7.
162. Article 8.

The POPs Convention contains important provisions relating to the exchange of relevant information among Parties to reduce or eliminate the production, use and release of POPs including their alternatives;[163] promoting and facilitating public information, awareness and education;[164] encouraging and undertaking appropriate research, development, monitoring and cooperation;[165] rendering of timely and appropriate technical assistance to developing country Parties and Parties with economies in transition;[166] and providing financial support and incentives in accordance with national plans, priorities and programmes.[167] Each Party is required to report, at periodic intervals, to the Conference of the Parties and provide statistical data to the Secretariat regarding the measures it has taken to implement the provisions of the Convention.[168] The Conference of the Parties has also to evaluate, at periodic intervals, the effectiveness of the Convention.[169]

The evidence provided by the scientific discoveries with respect to ill effects of ' dirty dozen' on human health and environment led to the adoption of POPs Convention by the international community. POPs resist natural degradation, bio-accumulate and cause serious harm to human health including endocrine disruptions as well as to environment. Arctic ecosystem and indigenous people who live on fish and mammals are particularly vulnerable to harm from POPs. POPs Convention requires the Parties to take effective measures to ultimately eliminate the production and use of these substances and to ensure that their destruction, disposal and transboundary

163. Article 9.
164. Article 10.
165. Article 11.
166. Article 12.
167. Article 13.
168. Article 15.
169. Article 16.

movement are done in an environmentally sound manner. Parties have to find out alternatives to POPs through the application of relevant science and technology. With regard to the regulation of POPs the 'precautionary principle', has been applied and incorporated in the Preamble itself so that scientific uncertainty can not be made a ground for non-regulation.

2.19 Conclusion

The POPs Convention is a step in the right direction and the required number of states should ratify the Convention as early as possible so that it comes into force without any delay. Sound management of chemicals should be on the top of international agenda and the provisions of FAO Code, amended London Guidelines, Rotterdam Convention and POPs Convention should be effectively enforced. The Plan of Implementation adopted by the World Summit on Sustainable Development on 4th September, 2002 required certain targets to be achieved by 2020. Paragraph 23 requires that chemicals should be used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment; transparent science - based risk assessment procedures and science based risk management procedures should be used; precautionary approach, as set out in Principle 15 of the Rio Declaration, should be taken into account; and developing countries should be supported in strengthening their capacity for the sound management of chemicals and hazardous waste by providing technical and financial assistance.[170] The major capacity building programmes launched in individual countries, especially developing countries, should be supported by international community and the whole world should work as a 'unit' since

170. *Report of the World Summit on Sustainable Development*, Johannesburg, South Africa, 26th August - 4th September, 2002 (United Nations Publication No. E. 03.11. A.1).

'chemical risks do not respect national boundaries'. A proper network between programmes and organisations charged with monitoring and assessing chemicals in the environment should be established

The next four chapters are devoted to Indian laws pertaining to hazardous substances A detailed study of the Indian legal regime is presented to ascertain as to how far India has responded to the global concern against hazardous substances. India, being signatory to many international legal instruments, has responded positively to the global concern and incorporated various provisions of these instruments into national laws The Constitutional provisions, the general central statutes; the special central enactments as well as the rules made and notifications issued thereunder touch the specific problems associated with hazardous substances A detailed survey of these laws vis-à-vis judicial response has been presented in the forthcoming chapters

Chapter – 3

Constitutionalising the Problem of Environment

The most significant achievement of modern law in India is the constitutionalisation of environmental problems, which has been achieved, by our Supreme Court in the last 25 years of judicial history of this country. Prior to the year 1980 there were legislations about control of pollution but little had been done to really make pollution control a priority item on the agenda. The courts have been successful in developing certain initiatives, which have cumulated in making environmental law problems the most significant problems arising before the courts. The efforts of the court have been noticed in international fora and may be deservedly considered the precursor of modern environmental law in India. The major initiatives generated by the courts are as follows:

- Generation of a new fundamental right to wholesome environment.
- The collapsing of Directive Principles into Fundamental Rights.
- Importation of international norms of 3rd generation collective rights for sustainable development.

We will discuss the initiatives after we have looked at the root of the development.

3.1 Root of the Development

The root of development can be traced to the opinion of Krishna Iyer, J. in *Municipal Council, Ratlam* v. *Vardhichand.*[1] The opinion is noticeable for its

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1 (1980) 4 SCC 162.

mundaneness. A cursory reading of the opinion gives an impression that the matter involved related to the duty of the local authorities to eradicate nuisance created by accumulation of filth and dirty water on the street, but a deeper look at the opinion will show that the court was marching to a different tune. The problem as formulated by Justice Iyer was how to make law respond to the need to force public bodies under public duties to implement specific plans in response to public grievances. The question which the Court really addressed was whether the Court can take up the role of a catalyst in the process of good governance. It is unfortunate that the real nature of *Ratlam* opinion has not been appreciated.

The case arose out of simple circumstances. The Municipal Council of Ratlam failed to take steps to maintain roads in a particular locality in a safe and sanitary condition. The sole excuse of the Municipal Board was that it had no money to maintain the road. The result was that 'in this lawless locale, mosquitoes found a stagnant stream of stench so hospitable to breeding and flourishing, with no municipal agent disturbing their stinging music at human expense. The local denizens, driven by desperation, at long last, decided to use the law and call the bluff of the municipal body's bovine indifference to its basic obligations...'

Justice Iyer stated that there was an urgent need to focus on the ordinary man. Quoting from a famous work called Access to Justice,[2] Justice Iyer said 'The recognition of this urgent need reflects a fundamental change in the concept of "procedural justice"... The new attitude to procedural justice reflects what

2. M. CAPPELLETTI & B. GARTH, ACCESS TO JUSTICE 68 (Vol. 1, A World Survey ed.).

Professor Adolf Homburger has called "a radical change in the hierarchy of values served by civil procedure"; the paramount concern is increasingly with "social justice", i.e., with finding procedures which are conducive to the pursuit and protection of the rights of ordinary people'. The Court noted that the matter had been pending for more than 7 years. It specifically read into the situation a constitutional directive for the Court. Krishna Iyer, J. observed 'Where directive principles have found statutory expression in Do's and Don'ts the court will not sit idly by and allow municipal government to become a statutory mockery. The law will relentlessly be enforced and the plea of poor finance will be poor alibi when people in misery cry for justice'.

If the opinion in the *Ratlam case* is read critically, the opinion reveals a paradigm change in the role of the courts. Ordinarily and particularly before *Ratlam* the role of the courts was considered reactive. They were specifically to dispense justice where rights have been denied. Justice Iyer added a proactive dimension by stating that where the Directive Principles of the Constitution have jelled out the desired acts or omissions, the courts are under a duty to 'relentlessly' enforce the law. This formulation has emboldened the efforts of environmental protection. It reinforced the idea that legal power can command obedience from reluctant bureaucracies.

As the result of the 42nd amendment to the Constitution the directive principles categorically asserted the need for a healthy environment and thus indicated the Do's and Don'ts needed for a healthy environment. The necessary implication was that the courts have a duty to relentlessly enforce this law, which was an open invitation to constitutionalise the problems of management of the environment. This opened the doors of higher courts to intervene in

enforcement of environmental legislation. This amounts to creation of a separate forum to force the State to take required measures for environmental protection. The result of *Ratlam case* was that in the following 25 years there has been a spate of judicial opinion from the higher courts that have formally put the environmental problems on a constitutional pedestal.

3.2 Fundamental Right to a Wholesome Environment

The fundamental right to a wholesome environment is not expressly guaranteed by the Constitution. Part III of the Constitution does not specifically enumerate any such right. The right to wholesome environment has been sub-silentio recognised by the Supreme Court in a chain of cases. This sub-silentio approach exhibits a tendency to avoid raising any controversy on such a question. It can mean any of the two things. It can either mean that the right to wholesome environment is ipso-facto a part of the right to life and personal liberty, too well understood to require rationalisation. The other alternative reading may be to introduce this right without any rationalisation so as to avoid a debate on the issue. Be that as it may, the recognition by the Court of a fundamental right to wholesome environment is a product of the process of widening the scope of Article 21 of the Constitution which began in *Maneka Gandhi's case.*[3]

It is well known in constitutional jurisprudence that the last 25 years of constitutional adjudication have seen Article 21 of the Constitution going through three phases. The first phase was of narrow textual interpretation followed by another stage of residual coverage. In the third phase Article 21

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3. *Maneka Gandhi* v. *Union of India*, AIR 1978 SC 597.

emerged as an overarching fundamental right in the Constitution of India. A detailed discussion of the process will be out of place in this work but we may briefly recapture the main landmarks of this process.

In the very first case arising under the Constitution, *A.K. Gopalan* v. *State of Madras*,[4] the majority of the Court preferred to give Article 21 a narrow scope. It read the Article literally and confined its scope with reference to the meaning given to 'personal liberty' by Professor A.V. Dicey.[5] Prof. Dicey considered that the right to personal liberty means nothing more than freedom from arbitrary arrest or imprisonment without the authority of law. The majority of the Court in *Gopalan* incorporated Dicean conservatism into the fabric of Indian Constitutional Law. The commentators have opined that the Supreme Court lost a significant opportunity to incorporate a liberal view of personal liberty in the Constitution.

The Dicean view was adhered to by the courts in India upto 1963 when in *Kharak Singh* v. *State of U.P.*,[6] Subba Rao, J. sought to partly liberalise the Dicean view. In *Kharak Singh*, the question related to the legality of domiciliary visits by the police to the residence of bad characters. The argument which was accepted by the Court was that the expression personal liberty has a wide meaning. It encompasses all such rights as are not incorporated in Article 19 of the Constitution. The result was that the narrow

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4. AIR 1950 SC 27.
5. According to Professor Dicey, 'the right to personal liberty as understood in England means in substance a person's right not to be subjected to imprisonment, arrest, or other physical coercion in any manner that does not admit of legal justification'. *See* DICEY, THE LAW OF THE CONSTITUTION 207-208 (10th ed.) in H.M. SEERVAI, CONSTITUTIONAL LAW OF INDIA 985 (4th ed. 1999).
6. AIR 1963 SC 1295.

Dicean view was partly modified. Articles 19 and 21 were read in a complementary manner. Personal liberty is a bundle of rights. Some of these rights are expressly recognised by Article 19. These rights were excluded from Article 21. The remaining rights which were incidental to personal liberty were covered by Article 21. Another development occurred in *R.C. Cooper* v. *Union of India*,[7] where the Supreme Court criticised the tendency of the courts to read each article in Part III as an isolated guarantee. It held that the various guarantees have to be read together in a cumulative manner. This development facilitated the adoption of a wide coverage of Article 21. In *Maneka Gandhi's case*,[8] a liberal view of the scope of Article 21 was taken, so that Article 21 became the repository of all rights which are necessary for the enjoyment of life. The extension of Article 21 opened the way for incorporation of the right to a wholesome environment within the protection of the Constitution. Bhagwati, J. delivering the majority judgment observed:

> It is indeed difficult to see on what principle we can refuse to give its plain natural meaning to the expression 'persona liberty' as used in Article 21 and read it in a narrow and restricted sense so as to exclude those attributes of personal liberty which are specifically dealt with in Article 19. We do not think that this would be a correct way of interpreting the provisions of the Constitution conferring fundamental rights. The attempt of the Court should be to expand the reach and ambit of fundamental rights rather than attenuate their meaning and content by a process of judicial construction.

Bhagwati, J. who was the principal architect of broadening the scope of Article 21, himself had the opportunity to extend the protection of Article 21 to the right to wholesome environment. In *Rural Litigation and Entitlement Kendra,*

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7. AIR 1970 SC 564.
8. *supra* note 3.

Dehradun v. *State of U.P.*,[9] the issue was in respect of the closure of certain limestone quarries in and around the town of Mussoorie. The Court itself noted that the case was the first of its kind in the country involving issues relating to environment and ecological balance and the questions arising for consideration were of grave moment and significance. The Court also noted that the situation involved the conflict between development and conservation and served to emphasise the need for reconciling the two in the larger interest of the country. The Court, however, avoided any discussion of the fundamental right to a wholesome environment or its emergence from the guarantee of personal liberty. There is only a small part of the single sentence which refers to the 'need of safeguarding the right of the people to live in healthy environment with minimal disturbance of ecological balance and without hazard to them or their cattle, homes and agricultural land and undue affection of air, water and environment'.[10]

Bhagwati, J. obviously avoided a discussion of the basic question whether a right to wholesome environment was included under the umbrella of the right to life. There can be many reasons of this strategy because Justice Bhagwati had himself observed that it was not possible for the Court to prepare a full and detailed judgment immediately. The Court proposed to make an order, the reasons for which would be set out in the judgment to follow later. However, that never happened. Another reason may be that the Court was conscious of the fact that the matter involved a large number of quarries with a large number of workers whose existence depended on these quarries. The third reason may be that Justice Bhagwati was already convinced of the overarching scope of personal liberty since he was the prime architect of the expansive concept in

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9. AIR 1985 SC 652.
10. *Id.* at 656.

Maneka Gandhi. But all these reasons can not really explain why the Court, without any rationalisation, proceeded to issue a remedy on a writ under Article 32 without first establishing that Article 32 was available to the petitioners.

The same strategy of avoidance of the need to rationalise the inclusion of the right to wholesome environment among the fundamental rights was repeated in *M.C. Mehta* v. *Union of India*.[11] In this case also the question was whether the Supreme Court can decree compensation for violation of the right to wholesome environment in a petition under Article 32 of the Constitution. While discussing at length the power of the Court to devise procedure appropriate for the enforcement of a fundamental right, not even a sentence was devoted to a declaration incorporating the right to wholesome environment within the guarantee of life and personal liberty. Bhagwati, J. again missed the opportunity in *M.C. Mehta* v. *Union of India*.[12] The same approach was reflected by another bench of Honourable Supreme Court in *Sachidanand Pandey* v. *State of W.B.*[13] Chinnappa Reddy, J. referred to Article 48A of the Constitution which enshrined the directive principle to protect and improve the environment. His Lordship also referred to Article 51A(g) which proclaims it to be the fundamental duty of every citizen of India to protect and improve the natural environment. After referring to these two provisions, the Court should have considered whether the right to wholesome environment is a fundamental right but it avoided doing so. It held:

> When the Court is called upon to give effect to the Directive Principle of State Policy and the Fundamental Duty; the Court is

11. AIR 1987 SC 1086.
12. AIR 1987 SC 965.
13. (1987) 2 SCC 295.

> not to shrug its shoulders and say that priorities are a matter of policy and so it is a matter for the policy making authority The least that the Court may do is to examine whether appropriate considerations are borne in mind and irrelevant excluded

The Court in *Sachidanand Pandey* overlooked the basic problem that a remedy under Article 32 could not be provided either for enforcement of the directive principle or for the enforcement of a fundamental duty. The basic sub-stratum, namely violation of a fundamental right was not established in *Sachidanand Pandey.*

There can be two different explanations for what the Court did We can read *Sachidanand Pandey* to lay down the principle that Article 32 remedies would also be available for enforcement of directive principle and fundamental duty In the alternative, *Pandey* may be read as contributing to the same attitude of avoiding specific rationalisation of the right to wholesome environment as a part of right to life

Venkat Ramayyah, J followed the *Pandey* strategy in a *Ganga Pollution case,*[14] referring to the directive principle and the fundamental duty but not to the fundamental right. Finally in *M/s Shantistar Builders* v. *Narayan Khimalal Totaine,*[15] which was really a right to shelter case and did not involve an environmental issue, Ranganath Misra, J observed as follows

> Basic needs of man have traditionally been accepted to be three - food, clothing and shelter. The right to life is guaranteed in any civilized society. That would take within its sweep the right to food, the right to clothing, the right to decent environment and a reasonable accommodation to live in. The difference between the need of an animal and a human being for shelter has to be kept in view. For the animal it is the bare protection of the body;

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14 *M C Mehta* v. *Union of India,* AIR 1988 SC 1115.
15. AIR 1990 SC 630.

> for a human being it has to be a suitable accommodation which would allow him to grow in every aspect - physical, mental and intellectual.[16]

Sometime later, Saghir Ahmad, J. in *M.C. Mehta* v. *Kamal Nath*,[17] observed as follows:

> In order to protect "life", in order to protect "environment" and in order to protect "air, water and soil" from pollution, this Court, through its various judgments has given effect to the rights available, to the citizens and persons alike, under Article 21 of the Constitution.[18]

Both Justice Ranganath Misra and Justice Saghir Ahmad have avoided any discussion of the question whether right to wholesome environment is included in the right to life under Article 21 of the Constitution. Both have taken it for granted as if no discussion was needed or required.

While the Supreme Court was avoiding a rationalisation exercise, the High Courts took different initiatives. In *L.K. Koolwal* v. *State of Rajasthan*,[19] the Rajasthan High Court drew a co-relation between the fundamental duty of the citizens incorporated in Article 51A and the existence of a fundamental right to wholesome environment. Mehta, J. used the Salmondian relationship between right and duty to read the right out of the duty of the citizen in respect of environment. The opening sentence of the order emphasised the co-relation of right and duty. The Court observed "right and duty co-exist. There can not be any right without any duty and there can not be any duty without any right". From this premise, the Court proceeded to argue that since citizens have a

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16. *Id.* at 633.
17. (2000) 6 SCC 213.
18. *Id.* at 220.
19. AIR 1988 Raj. 2.

fundamental duty under Article 51A, Article 21 must be read to include the right to wholesome environment.

It may be noted that the initial premise of the Court is shaky, since the concept of absolute duties is well established in jurisprudence. It is very difficult to assert that for every legal duty a co-relative right has to be mandatorily discovered within the legal system.

Perhaps the Court itself was aware of the weakness of its initial premise and therefore it added that maintenance of environment falls within the ambit of Article 21 as it affects the rights of citizens and 'it amounts to slow poisoning and reducing the life of citizens because of the hazard created'.

The Himachal Pradesh High Court in *Kinkri Devi* v. *State of H.P.*[20] preferred to strengthen the premise chosen by the Rajasthan High Court with the help of directive principle in Article 48A. It argued that Article 48A was a pointer to the State and when it is read together with the citizens' duty under Article 51A(g) 'the neglect or failure to abide by the pointer or to perform the duty is nothing short of betrayal of fundamental law which the State was bound to uphold and maintain'.

The concept of a fundamental law underlying the text of the Constitution is as ephameral as the judicial relationship between rights and duties. It is like an argument to the sprit of the Constitution which Dr. Ambedkar vehemently stressed before the Supreme Court in *State of Bihar* v. *Maharajadhiraja Sir*

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20. AIR 1988 HP 4.

Kameshwar Singh.[21] The Court then had unanimously rejected it and the argument has never found favour as yet.

The Andhra Pradesh High Court in *T. Damodar Rao* v. *The Special Officer, Municipal Corporation of Hyderabad*[22] advocated a third alternative. It began with the premise that the common law concept of ownership included the right to use, abuse and destroy. But the environmental law has succeeded in unshackling man's right to life and personal liberty from the clutches of common law theory of ownership. Article 51A(g) was a clear pointer to this trend and therefore it will be reasonable to hold that the enjoyment of life and its attainment and fulfillment, 'guaranteed by Article 21 of the Constitution embraces the protection and conservation of nature's gift without (which) life can not be enjoyed'. The Court also followed the logic of *Kinkri Devi's case*[23] to argue that if Article 21 was a guarantee against violent extinguishment of life, there was no reason why Article 21 may not be regarded as a guarantee against slow poisoning by pollution. This argument misses the central point. Article 21 is a guarantee against the State. The logic adopted by the Court may be useful if the State is the polluter for it can be argued that what the State can not do directly it can not do indirectly. But to extend the same logic to read a positive duty on the part of the State to bring pollution by private parties to an end is to extend the logic beyond its confines.

The Kerala High Court realised the difficulties of reading a right to wholesome environment out of the directive principle in Article 47 or the fundamental duty

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21. AIR 1952 SC 252.
22 AIR 1987 AP 171.
23. *supra* note 20.

in Article 51A(g). Instead in *Madhavi* v. *Tilakam*,[24] it preferred to rely on the wide meaning given to the right to life by the Supreme Court in *Francis Coralie case*,[25] to argue that 'the right to enjoy life as a serene experience in quality far more than animal existence, is thus recognised'. The Court went on to observe that 'personal autonomy free from intrusion and appropriation is thus a constitutional reality'. Therefore, the conduct of any business or trade injurious to health or physical comfort of the community could be regulated or prohibited under the Constitution.

In a later case, *Law Society of India* v. *Fertilizers and Chemicals Travancore Ltd.*,[26] the Kerala High Court built upon the same premise referring to the decisions of the Supreme Court giving a broad meaning to the right to life, the Court held:

> Deprivation of life under Article 21 of the Constitution of India comprehends certainly deprivations other than total deprivation. The guarantee to life is certainly more than immunity from annihilation of life. Right to environment is part of the right to life. Apart from the rights under Article 21 of the Constitution of India and its refined articulations in Article 51A(g), we have to remember that in 1984, United Nations adopted a resolution, reading: "All human beings have the fundamental right to an environment adequate for their health and well being". A state of perpetual anxiety and fear of extermination of life is not an environment adequate for the health and well being of human race.[27]

It, therefore, appears that both the Supreme Court and the High Courts are agreed that a right to wholesome environment is included within the right to life guaranteed by Article 21 but there is no agreement on the rationale for the conclusion. Both the alternatives developed by the courts are not juridically satisfactory. The greatest difficulty is that Article 21 is couched in a negative

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24. (1988) 2 Ker. L.T. 730.
25. *Francis Coralie Mullin* v. *Union Territory, Delhi Administrator*, AIR 1981 SC 746.
26. AIR 1994 Ker. 308.
27. *Id.* at 370.

mood, to turn it around and read out from it positive duties does violence to the text of the Constitution. Of course, the alternative is to read the positive duties out of the directive principles and collapse the directive principles into fundamental rights. This development is taking place not only under environmental jurisprudence but also in other areas.

3.3 Collapsing of Directive Principles into Fundamental Rights

Another significant development which the courts made was of collapsing the Directive Principles of State Policy into the Fundamental Rights guaranteed by Part III of the Constitution. The enormity of the contribution had been usually missed because it came at the end of a changing trend during the last 25 years. It will be well if we recount the process of this change to give us an adequate understanding of the length traveled by the Supreme Court during the course of this development. There have been five stages in this process of development.

In the first stage, a relationship was established between the Directive Principles and Fundamental Rights in *State of Madras* v. *Champakam Dorairajan*.[28] That matter involved the constitutional validity of an order of the Government fixing the quota for admission in professional colleges in the State of Madras for each community. The claim of Mrs. Dorairajan was that such communal quota discriminated against citizens on grounds of cast, prohibited by Article 15 of the Constitution. The Supreme Court unanimously endorsed this claim holding that the government order violated Article 15. It was argued before the Court that Article 41 of the Constitution, which was a part of the Directive Principles, required the State to make effective provision for securing

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28. AIR 1951 SC 226.

the right to education for the weaker sections of the society and Article 46 enjoins upon the State to promote with special care the educational and economic interests of the weaker sections of the people.

In the context of these arguments, the Supreme Court rejected the claim of the State that in pursuit of the Directive Principles of State Policy the State could restrict or whittle down the ambit of a Fundamental Right. The Court had held that the Directive Principles have to conform to and run subsidiary to the chapter on Fundamental Rights. The sole reason given by the Court was that Fundamental Rights were enforceable in court of law while Directive Principles were not so enforceable. In a seminal Article written by Professor Blackshield,[29] it has been forcefully argued that the conclusion of the Court was not inevitable particularly in the light of the constitutional history which could have shown that the framers of the Constitution had given equal importance to Fundamental Rights and Directive Principles of State Policy and it was merely for the fear that if the Directive Principles were made enforceable an impossible economic burden would be imposed upon the State that the two were put in different Parts. The idea was not to rank Fundamental Rights higher than the Directive Principles which idea was totally missed by the Honourable Court in *Champakam*.

It is often ignored that the Supreme Court itself quickly corrected the approach in *Kameshwar Singh's case*,[30] where Mahajan, C.J. used the Directive Principles to give meaning to the concept of public purpose in Art 31 of the Constitution. Article 15 itself was amended by the first amendment in the

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29. A.R. Blackshield, *"Fundamental Rights" and the Institutional Viability of the Indian Supreme Court*, 8 J.I.L.I., 139 (1966).
30. *supra* note 21.

Constitution in an attempt to nullify the effect of *Champakam*.[31] Nevertheless, the textual distinction between Fundamental Rights and the Directive Principles was raised into a shibboleth in a number of cases.[32]

The attitude of the Court underwent a change in two phases. In the first phase it was recognized that the Directive Principles can also be taken into consideration in construing ambiguous provisions of the Constitution because a document has to be read as a whole. Thus in a number of cases the Directive Principles were used to determine the content of Fundamental Rights.[33]

A qualitative change, however, came following the confrontation between the Supreme Court and the Parliament in *Golaknath* v. *State of Punjab*.[34] It may be mentioned that Subba Rao, C.J. specifically admitted the need for a more functional response in preference to a textual response to the interpretation of the Constitution. In *Chandra Bhawan Boarding and Lodging* v. *State of Mysore*,[35] Mr. Hegde, J. speaking for a constitutional bench laid down a new approach to the relationship of Directive Principles and Fundamental Rights. He observed:

> While rights conferred under Part III are fundamental, the directives given under Part IV are fundamental in the governance of the country. We see no conflict on the whole between the provisions contained in Part III and Part IV. They are complementary and supplementary to each other. The

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31. *supra* note 28.
32. *Deep Chand* v. *State of U.P.*, AIR 1959 SC 648; *State of Madras* v. *Champakam Dorairajan*, AIR 1951 SC 226; *Mohd. Hanif Qureshi* v. *State of Bihar*, AIR 1958 SC 731; *In re Kerala Education Bill, 1957*, AIR 1958 SC 956.
33. *State of Bombay* v. *F.N. Balsara*, AIR 1951 SC 318; *State of Bihar* v. *Kameshwar Singh*, AIR 1952 SC 352; *Bijay Cotton Mills* v. *State of Ajmer*, AIR 1955 SC 33; *Mohd. Hanif Qureshi* v. *State of Bihar*, AIR 1958 SC 731; *Orient Weaving Mills* v. *Union of India*, AIR 1963 SC 98; *M.M. Pathak* v. *Union of India*, (1978) 2 SCC 50: AIR 1978 SC 803.
34. AIR 1967 SC 1643.
35. AIR 1970 SC 2042. .

> provisions of Part IV enable the legislatures and the Government to impose various duties on the citizens. The provisions therein are deliberately made elastic because the duties to be imposed on the citizens depend on the extent to which the directive principles are implemented. The mandate of the Constitution is to build a welfare society in which justice, social, economic and political shall inform all institutions of our national life. The hopes and aspirations aroused by the Constitution will be belied if the minimum needs of the lowest of our citizens are not met.[36]

If these observations are read carefully they signify a complete abnegation of the scheme of precedence recognised in *Champakam*.[37] The Constitution substituted the language of complementarity in espousing the view that both the Parts of the Constitution must be read together to realise the aspirations of the Constitution.

Mathew, J. in the same vein described the relationship in *Keshava Nanda Bharti* v. *State of Kerala*,[38] in terms which have become classical. He observed:

> I think there are rights which are inherent in human beings because they are human beings-whether you call them natural right or by some other appellation is immaterial. As the preamble indicates, it was to secure the basic human rights like liberty and equality that the people gave unto themselves the Constitution and these basic rights are an essential feature of the Constitution; the Constitution was also enacted by the people to secure justice, political, social and economic. Therefore, the moral rights embodied in Part IV of the Constitution are equally an essential feature of it, the only difference being that the moral rights embodied in Part IV are not specifically enforceable as against the State by citizen in a court of law in case the State fails to implement its duty but, nevertheless, they are fundamental in the governance of the country and all the organs of the State, including the judiciary, are bound to enforce those directives. The Fundamental Rights themselves have no fixed content; most of them are merely empty vessels into which each generation must pour its content in the light of its experience. Restrictions, abridgment, curtailment, and even abrogation of these rights in circumstances not visualised by the Constitution-makers might become necessary; their claim to supremacy or

36. *Id.* at 2050.
37. *supra* note 28.
38. (1973) 4 SCC 225, 880-81.

> priority is liable to be overborne at particular stages in the history of the nation by the moral claims embodied in Part IV

The views of Mathew, J. were given a classic term by Chinnappa Reddy, J in *Akhil Bharatiya Soshit Karamchari Sangh (Railway)* v *Union of India*,[39] where the *Champakam* approach was rejected as a way of thinking "of the past" which has "become obsolete" A whole new philosophy was introduced Reddy, J. observed

> It is not universally recognised that the difference between the Fundamental Rights and Directive Principles lies in this that Fundamental Rights are primarily aimed at assuring political freedom to the citizens by protecting them against excessive State action while the Directive Principles are aimed at securing social and economic freedoms by appropriate State action The Fundamental Rights are intended to foster the ideal of a political democracy and to prevent the establishment of authoritarian rule but they are of no value unless they can be enforced by resort to courts So they are made justiciable But, it is also evident that notwithstanding their great importance, the Directive Principles cannot in the very nature of things be enforced in a court of law It is unimaginable that any court can compel a legislature to make a law If the court can compel Parliament to make laws then parliamentary democracy would soon be reduced to an oligarchy of judges It is in that sense that the Constitution says that the Directive Principles shall not be enforceable by courts [40]

It may be noted that the very purpose of the Fundamental Rights and Directive Principles was redefined Fundamental Rights were meant to ensure political freedom while Directive Principles were aimed at securing social and economic freedom. The Court also pressed considerations of functional compatibility to argue that courts can not compel the Parliament to make laws for the danger is that if that was allowed Parliamentary democracy would be replaced by oligarchy of judges

In environmental matters, however, a new situation arose. The facts were that no Fundamental Right textually ensured the right to wholesome environment.

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39 (1981) 1 SCC 246
40 *Id* at 308-309

But as a result of the 42nd Amendment to the Constitution, Article 48A was added to the Directive Principles providing for protection and improvement of environment and safeguarding of forests and wildlife. The same Constitutional Amendment also added Part -IVA which enumerated ten Fundamental Duties of the citizen, including in clause (g) the duty to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

The courts have used the provisions of Article 48A and 51A(g) to spell out a fundamental right to wholesome environment as part of the right to life. On the face of it, it appears that this is nothing new but the very embodiment of the approach to interpret the Fundamental Rights in the light of Directive Principles. But it is not merely that. Most of the observers of the Constitution have been misled into giving importance to this development. In fact most of the courts themselves have avoided recusanting on the reasons for this conclusion. This has resulted in a kind of ignorance which would have been bliss had it not been so counterproductive. It would be really a welcome advance to raise environmental concerns to the dignity of Fundamental Rights but as we have seen in the preceding section is a job which is still to be done. What has, therefore, happened is a process of collapsing of certain Directive Principles into Fundamental Rights.

3.4 Importation of International Norms of 3rd Generation Collective Rights for Sustainable Development

The most remarkable contribution of the Supreme Court has been the adoption of the right to sustainable development as a hard core principle of

environmental law in India. The concept of sustainable development itself is comparatively young. It first appeared in the International Union for Conservation of Nature and Natural Resources (IUCN) Report of 1980 in respect of world conservation strategy. From there, it was picked up by the Report of the World Commission on Environment and Development in 1987, popularly called the Brundtland Report. The report itself was the product of 900 days of deliberations by an international group of politicians, civil servants and experts on environment.[41]

The concept of sustainable development is nebulous and imprecise. Holmberg and Sandbrook identified some 70 definitions of sustainable development.[42] However, amongst all this imprecision, the definition which has been widely adopted is that of Mrs. G.H. Brundtland in her 1987 report where she said that sustainable development is development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. This definition has a strong ethical orientation focusing upon the satisfaction of human needs rather than wants. It does not lay emphasis on the protection of environment in general. Many contemporary environmentalists are very critical of the concept of sustainable development because it licences economic growth.[43] But the concept of sustainable development has a mass appeal precisely because it is a catch phrase capable of repetition in 'a parrot

41. For a history of the emergence of the concept of sustainable development, *see* W.M. ADAMS, GREEN DEVELOPMENT: ENVIRONMENT AND SUSTAINABILITY IN THE THIRD WORLD (London, 1990).
42. J. Holmberg & R. Sandbrook, *Sustainable Development: What is to be done*? in POLICIES FOR A SMALL PLANET, (J. Holmberg ed., London, 1992).
43. *Ibid.*

like fashion by environmental policy makers'.[44] The Supreme Court has, however, been careful to distinguish between the concept of sustainable development and its definition by Brundtland preferring not to fall for any given content for the concept and thus open the way for an active definition of sustainable development with a varying content. At least at the moment, it has chosen to avoid the need to go for any precision. In the few but leading cases sustainable development has been adopted as the principle of environmental law.

In a series of cases which may not be large in number but which have much economic significance, the Supreme Court had to consider the application of the principle of sustainable development. All these cases involved industries generating sizeable revenues and significantly contributing to the industrial development of the country. However, these cases also show that the industries hardly cared for the environment and were not only significant polluters but were also persistent. Repeatedly the environmental agencies implored upon them to rectify their pollutant emissions and effluents but the industries hardly cared. Even directions issued by the High Courts and the Supreme Court were ignored. In a sense, the behavioural pattern of the industry was irresponsible. The situation seemed to be destined for doom for the industry hardly cared and the environmental agencies could not really bring their weight to bear upon the industries. The industries classically represent the case of too powerful defendants who continue to flex their muscles totally ignoring the degradation of the environment caused by the industries. Such muscle flexing is common in soft states where the majesty of law is often compromised by considerations of status and wealth.

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44. W. BECKERMAN, 'SMALL IS STUPID: BLOWING THE WHISTLE ON THE GREENS, 1 (London, 1995).

The first case involving claims to sustainable development was the *Bichhri Village Case*.[45] Bichhri is a small village in district Udaipur of Rajasthan. To the north of the village, there was a big public sector concern, 'Hindustan Zinc Ltd.' Other industries grew around Bichhri. Hindustan Agro Chemicals produced a concentrated form of sulphuric acid and single super phosphate. Its sister concern, Silver Chemicals started producing 'H' acid in the same complex. The chemical was meant exclusively for exports. Jyoti Chemicals was also established to produce 'H' acid in the same complex. 'H' acid was a highly toxic substance and the effluents from it posed grave danger to the earth in the surrounding areas. The effluents poisoned the earth, the water and everything else. Jyoti Chemicals and Silver Chemicals nearly produced 25 hundred metric tons of highly toxic sludge. The waste waters were allowed to flow out in the open and the toxic sludge was thrown in the open in and around the complex The toxic substances percolated deep into the earth polluting the subterranean supply of water. The water in the wells and the streams became unsuitable not only for human consumption but also for irrigation. The people revolted and a serious law and order situation was created forcing the District Magistrate to close Silver Chemicals and Jyoti Chemicals in January 1989. Yet nothing was done to remove the sludge. The long lasting damage to earth and to underground water continued to exist.

The facts revealed that the units were established without obtaining no objection certificate from the Pollution Control Board for production of 'H' acid. They also revealed that the Supreme Court had issued a direction as early

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45 *Indian Council for Enviro Legal Action* v. *Union of India*, (1996) 3 SCC 212.

as 11 December 1989 for supply of drinking water to the affected villages and on 5 March 1990 the Court directed that appropriate steps be taken for transportation, treatment and safe storage of the sludge. Again on 4 April 1990, the Court directed removal of the sludge from open spaces and required that the sludge be stored in a safe place. But nothing happened. In the succeeding year, the industry tried to camouflage the sludge but did mighty nothing to remove it so that again on 17 February 1992, the Court directed an assessment by experts who were also to suggest a package of remedies for its transportation and safe storage. But still nothing happened. In 1994, the National Environmental Engineering Research Institute (NEERI) submitted a report which showed that only 720 metric tons of sludge was entombed while the rest of the waste was just spread over the open fields. The NEERI report concluded that the indiscriminate and willful disposal activity by the industry was further aggravating the contamination problem.

These facts highlight the total non-cooperative attitude of the industry to the danger which it had itself created to the detriment of the environment in Bichhri. Appalled by the state of affairs, the Supreme Court quickly reacted to the situation. It resurrected the principle laid down in the famous *Shri Ram case*,[46] which was threatened with oblivion because of the casual observation of Ranganath Misra, J. in *Union Carbide Corporation* v. *Union of India*.[47] Misra, J. had felt that the principle laid down in *Shri Ram case* was an *obiter*.[48] The Court held that it was not so and the rule in the *Shri Ram case* was the most

46. *M.C. Mehta* v. *Union of India*, (1987) 1 SCC 395.
47. (1991) 4 SCC 584.
48. These cases have been discussed in chapter VII, *infra*, at 398-400.

appropriate one because it suited the conditions obtaining in this country. There was also a veiled reference to the problem of intransigent rich defendant whose pursuit of private profit blinded all claims of poor people. The Court held that once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person by his activity irrespective of the fact whether he took reasonable care while carrying on his activity. The Court did not refer in terms to the ideals of sustainable development. Nevertheless the situation in this particular case classically represents the conflict between the claims of development and the claims of sustainable environment. In fact Jeevan Reddi, J. portrayed the conflict in the opening words of his opinion which are worth reproducing:

> It highlights the disregard, nay, contempt for law and lawful authorities on the part of some among the emerging breed of entrepreneurs, taking advantage, as they do, of the country's need for industrialisation and export earnings. Pursuit of profit has absolutely drained them of any feeling for fellow human beings - for that matter, for anything else. And the law seems to have been helpless. Systemic defects? It is such instances which have led many people in this country to believe that disregard of law pays and that the consequences of such disregard will never be visited upon them - particularly, if they are men with means.[49]

The next case involving the same kind of problem related to tanneries in Tamil Nadu.[50] The tannery industry is a big foreign exchange earner but its effluents are released on the lands, the rivulets and the rivers polluting the sub-soil water and arable lands. The facts showed that the industries were reluctant to provide for treatment of effluents. The Court felt that even though the industry was earning foreign exchange and providing employment, contributing to

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49. *supra* note 45, at 217.
50. *Vellore Citizens Welfare Forum* v. *Union of India*, AIR 1996 SC 2715.

development, 'it has no right to destroy the ecology, degrade the environment and pose a health hazard'.

The Court held that sustainable development is the answer to the problem of conflict between development and ecology. Without much discussion of the content of sustainable development the Court held that sustainable development is a balancing concept and has been accepted as part of the customary international law. The Court even went one step further to declare that the precautionary principle and the polluter pays principle have been accepted as part of the law of the land in India

In *A.P. Pollution Control Board II* v. *Prof. M.V. Nayudu (Retd.)*,[51] the Supreme Court took the question for indepth consideration The matter involved the question of permission for establishment of industry within 10 km of the two big water reservoirs, the Himayat Sagar and the Osman Sagar reservoirs, serving the twin cities of Hyderabad and Secunderabad Jagannadha Rao, J. speaking for the Court adopted the principle of sustainable development. He began by asserting that in today's emerging jurisprudence, environmental rights are described as 3rd generation rights. The United Nations General Assembly has declared the right to sustainable development as an inalienable human right. He also referred to the Rio Conference which adopted as principle 1 the principle that every human being is entitled to a healthy and productive life in harmony with nature. The learned judge went on to refer to the Earth Summit Meeting of 1997 which reflected this principle. His Lordship also referred to a decision of the European Court of Justice in *Portugal* v. *F.C.*

51. (2001) 2 SCC 62.

Council,[52] which emphasised the need to promote sustainable development while taking account of the environment. His Lordship further referred to four recent decisions, one from Brazil, the other from Philippine, another from Columbia and the fourth from Union of South Africa. In *Yanomani Indians* v. *Brazil*,[53] the Inter-American Commission on Human Rights held that the Government of Brazil violated the right to life of Yanomanis by not taking measures to prevent environmental damage. In *Minors' Opasa* v. *Deptt. of Environment and Natural Resources*,[54] the Philippine Supreme Court refused to continue deforestation licenses because it violated the right to a balanced and healthful ecology for future generations. In *Fundepublico* v. *Mayor of Bugalagrande*, the Constitution Court of Columbia (17-6-1992) treated the right to healthy environment as part of customary international law. In *Wildlife Society of Southern Africa* v. *Minister of Environmental Affairs and Tourism of the Republic of South Africa*,[55] the right to healthy environment was further recognised. Lee has reported at the end of the last century that since 1990 some sixty nations have specifically recognised in their constitution the right to healthy environment.[56]

The reference to all these international sources clearly attested to the willingness of the Supreme Court to adopt the principle of sustainable development from the international domain as a basic principle of environmental law in India. In paragraph 6 of the judgment, Rao, J. categorically stated: 'There is building up, in various countries, a concept that a

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52. (3 C.M.L.R. 331) (1997).
53. 33 I.L.M. 173 (1994).
54. 7615 OEA/SCRLV/2/66 (1985).
55. (1996) 9 BCLR 1221 (TK).
56. 25 Columbia Journal of Environmental Law, 283 (2000).

right to healthy environment and to sustainable development are fundamental human rights implicit in the right to "life".'

The facts of the *Nayudu case*[57] clearly bring out the tensions generated by the principle of sustainable development. The affected industries had spent valuable resources in setting up the plants and their claim was that they should be allowed to function otherwise all the resources would go waste. The local State Government had recommended their application. Even though the Central Government refused the permission, the industry went on with the construction of its plants. The Court was not swayed by these claims instead it took into account expert reports from three different sources and after considering these reports felt that the Court could not rely upon a bare assurance that care will be taken in the storage of hazardous material. The Court preferred to proceed on the precautionary principle rather than a mere promise of the industries, holding that a chance of accident in such a close proximity of reservoir can not be ruled out.

The Supreme Court weighed in the *Nayudu case*[58] the claims of development against the claims of sustainability of the supply of pure water for drinking purposes. It gave precedence to the human need for drinking water over and above the possible economic advantage which could be generated by the industry for the State.

In the next case, the same conflict arose again but with reverse results. In *Goa Foundation* v. *Diksha Holdings Pvt. Ltd.*,[59] another division bench of the Supreme Court again faced a contest in the claims of sustainability and

57. *supra* note 51.
58. *Ibid.*
59. (2001) 2 SCC 97.

development. The Diksha Holdings sought permission to build a hotel in Goa which it claimed would contribute to business of tourism which was the main resource earner for the State of Goa. The Goa Foundation contended that the hotel was located in an area which fell in the Coastal Regulation Zone-1 (CRZ-1) where no building was allowed. It also contended that the construction of the hotel will destroy the ecology of coastal areas. The Supreme Court restated the principle that there should be a proper balance between the protection of environment and the development process. The society shall have to prosper but not at the cost of environment and the environment shall have to be protected but not at the cost of the development of the society. The Court held that the land in question on which the hotel was being built was not in the CRZ-1 area. The Court even refused to be persuaded by an expert of the National Institute of Oceanography because two of the scientists who had signed the report had earlier signed another report which favoured the builders Banerjee, J. laid down the following principle:

> While it is true that nature will not tolerate after a certain degree of its destruction and it will have its tone definitely, though, may not be felt in prasenti and the present day society has a responsibility towards a posteriority so as to allow normal breathing and living in cleaner environment but that does not by itself mean and imply stoppage of all projects.

While the Court upheld the claims of the builders, it was more for the reason that the nature of the land in question could not be proved beyond doubt. Faced with uncertainties, the Court preferred to favour development even at the cost of some risk to the environment. However, in *Diksha Holdings* as well as in the *Nayudu*, the Court never formulated a scheme of balancing. In the *Nayudu case*, the Court preferred to decide on the basis of precautionary

principle but why it did not do so in *Diksha Holdings* can perhaps only be explained by the fact that in *Nayudu case*, the right to drinking water was involved which is undoubtedly a pressing human need while in *Diksha Holding*, there was no material to show the value of sand dunes to the environment save in terms of aesthetics which the Court was willing to sacrifice to ensure development.

While both the *Nayudu* and *Diksha Holding cases* surely established the presence of sustainable development as a fundamental principle of environmental law, they yield little material guidance to ensure proper balancing. *Nayudu* can be used as a precedent holding for primacy of human needs while *Diksha Holding* is for giving weight to claims of development where the societal interests have no primacy. The two together can mean that where basic human needs are threatened, development takes a second place while if such needs are not threatened, development must be allowed to proceed. These cases also show that objective scientific evidence is of relevance only when it is unblemished The Court is not willing to act as a slave to the opinion of the cognoscenti. The weight to be given to expert evidence is to be determined by the Court using the traditional rules of evidence. Where the Court is convinced of its veracity, expert opinion becomes dispositive. But where doubts arise about the integrity or quality of the experts, the Court will ignore it.

The adoption of sustainable development as the basic principle of environmental law in India received its maximum in *M.C. Mehta* v. *Union of India*.[60] In this case, a three judge bench of the Supreme Court was considering

60. AIR 2002 SC 1696.

the question of issuing directions to substitute diesel vehicles on the roads of city of Delhi by vehicles driven by compressed natural gas (CNG). The matter had been in Court for as long as 16 years. As early as 23 September 1986, the Court had directed the Delhi Administration to file an affidavit specifying the steps to be taken for controlling pollution caused by emission of smoke etc. from vehicles plying in Delhi. A Committee called the Bhure Lal Committee was established under Section 3 of the EPA, 1986 and its report was accepted by the Court on 28 July 1998. A time limit was fixed for switching over diesel vehicles to CNG vehicles. The government had been dragging its feet and sought to dilute the directions of the Bhure Lal Committee by constituting another Committee headed by the Director General of CSIR, Mr. R.A. Mashelkar. The Mashelkar Committee recommended that emission norms must be laid down but the choice of fuels must be left with the user.

The Supreme Court categorically rejected the suggestion of the Mashelkar Committee on the ground that nothing concrete had resulted from adopting the process of fixing emission norms and directed that a time bound programme of replacing diesel buses with CNG buses be implemented.

The opinion of the Court is particularly noticeable for pronouncing the fundamental nature of sustainable development as an underlying principle. In paragraph 9 of the order, the Court observed:

> One of the principles underlying environmental law is that of sustainable development. This principle requires such development to take place which is ecologically sustainable. The two essential features of sustainable development are - (a) the precautionary principle, and (b) the polluter pays principle.

It is really difficult to find a comparable categorical statement from any other Court. The practical result of the hard attitude adopted by the Court is that the

environment of Delhi city is much more cleaner and free of smoke now in comparison to what it was two years earlier.

We now turn to an analysis of national legislative measures in the three succeeding chapters

Chapter – 4

Specific Legal Regime For Hazardous Substances: Rules and Notifications Issued Under EPA

Hazardous substances are dealt with by general laws, special laws and specific rules relating to such substances in India. The plan of this and two subsequent chapters is to deal with this body of law in a slightly different manner. We begin by focusing on the rules and notifications which directly and specifically deal with hazardous substances. The subsequent chapter deals with special laws dealing with hazardous substances. Finally, the last chapter deals with general laws which also impinge upon hazardous substances. The advantage of this plan is to focus attention on the special regime categorically developed for such substances. Otherwise it appears as if special regime is just an incremental addition to the general law The truth of the matter is that no where has the general law been adequate to handle the problem of hazardous substances Whether it is U.K. or U.S.A., a special regime has come into existence to deal with such substances because of their terrific impact on the quality of life and the safety of environment.

Under the enabling provisions of the Environment (Protection) Act, 1986 (EPA) a set of eight rules have been promulgated by the Union of India. These are:

- Hazardous Waste (Management and Handling) Rules, 1989
- Bio-medical Wastes (Management and Handling) Rules, 1998
- Batteries (Management and Handling) Rules, 2001
- Municipal Solid Wastes (Management and Handling) Rules, 2000
- Plastics Manufacture, Sale and Usage Rules, 1999

- The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- The Manufacture Use, Import, Export and Storage of Hazardous Micro-organisms / Genetically Engineered Organisms or Cells Rules, 1989

The EPA, 1986 contains provisions regarding the regulation and handling of hazardous substances. The term 'handling' has been defined to include almost all kinds of activities connected with hazardous substances.[1] The Central Government is empowered under the Act to lay down procedures and safeguards for the handling of hazardous substances;[2] the prohibition and restrictions on handling of hazardous substances in different areas;[3] and the procedure in accordance with and the safeguards in compliance with which hazardous substances are to be handled or cause to be handled.[4] The prescribed procedure is to be followed and safeguards are to be complied with by any person involved in the handling of such substances.[5] To carry out aforesaid purposes, the Central Government may, by notification in the Official Gazette, frame rules.[6]

The rapid pace of industrialisation, urbanisation and developmental activities have created a great stress on natural environment. The increasing pollution level in different environmental media is evident from the deteriorating air and water quality, high noise levels, increasing vehicular emissions, large production of hazardous wastes and release of toxic chemicals etc. Proper

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1. *See* Section 2(d).
2. Sections 3(2)(vii) & 6(2)(c).
3. Section 6(2)(d).
4. Section 25(2)(b).
5. Section 8.
6. Sections 6 & 25.

control and promotion of safe management and use of hazardous substances including hazardous wastes and hazardous chemicals have become imperative to avoid damage to health and environment. India has taken note of international efforts in this regard and various Rules have been framed by the Central Government as per the powers conferred on it by the EPA.

4.1 Management of Hazardous Wastes

Increase in human population and tremendous growth of industrialisation have increased the generation of hazardous waste. Safe disposal of hazardous waste generated by various industries like textiles, dyes, leather goods, engineering products, electroplating, pharmaceuticals, pesticides and insecticides has acquired utmost concern. India produced about 7.2 million tons of hazardous waste in the year 2000.[7] The volumes are increasing day by day and these wastes are indiscriminately being disposed of into rivers, lakes, sea, atmosphere and onto land thereby posing a serious threat to man and environment. Thus, the proper management and handling of these wastes become necessary for the welfare of mankind. Hazardous waste management has become an issue of grave concern for the authorities, regulators, environmental organisations and industries alike. In India, specific Rules have been notified by the Central Government in this regard. A survey of these Rules vis-a-vis judicial response may help us infer as to how far administrative efforts in India have been successful in the proper handling and management of hazardous wastes.

4.1.1 *Hazardous Wastes (Management and Handling) Rules, 1989*

In exercise of the powers conferred on it by Sections 6,8 and 25 of the EPA, the Central Government has framed Hazardous Wastes (Management and

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7. *Production thru unsound means causes eco-damage: Study*, Business Line (New Delhi) dated 26.8.2002: CSE-India Green File, August 2002, No. 176 at 9.

Handling) Rules, 1989[8] (hereinafter called 'HW Rules' or 'the Rules') dealing with the handling of hazardous wastes The Rules, as amended in 2000[9] and 2003,[10] apply to designated categories of waste enumerated in the Schedules to the Rules [11] Waste water and exhaust gases covered under the provisions of Water Act, 1974 and Air Act, 1981 respectively, waste arising out of the operation from ships covered under the provisions of the Merchant Shipping Act, 1958 and radio active wastes covered under the provisions of Atomic Energy Act, 1962 have been excluded from the purview of the Rules [12]

Under the Rules, the occupier and the operator of a facility[13] are responsible for proper collection, reception, treatment, storage[14] and disposal[15] of hazardous wastes listed in Schedules 1,2 and 3 They have to ensure that the wastes are properly handled and disposed of without having any adverse effects on the environment The treatment[16] has to take place as per the specifications of State Pollution Control Board (SPCB) or Committee (in respect of Union Territories) [17] It is the duty of the occupier and the operator of a facility to take adequate steps to prevent accidents and to provide the workers necessary information, training and equipment to ensure their safety [18] Similarly, the

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8 Vide S O 594(E) dated 28th July, 1989
9 By S O 24(E) dated 6th January, 2000
10 By S O 593(E) dated 20th May, 2003 published on 23rd May, 2003
11 For definition of 'hazardous waste' *see* Rule 3(14)
12 Rule 2
13 "Facility" means any location wherein the processes incidental to the waste generation, collection, reception, treatment, storage and disposal are carried out [Rule 3(12)] "Operator of a facility" means a person who owns or operates a facility [Rule 3(21)]
14 "Storage" means storing hazardous wastes for a temporary period, at the end of which the hazardous waste is treated and disposed of. [Rule3(29)]
15 "Disposal" means deposit, treatment, recycling and recovery of any hazardous wastes [Rule 3(8)]
16 "Treatment" means a method, technique or process, designed to change the physical, chemical or biological characteristics or composition of any hazardous waste so as to render such wastes harmless [Rule 3(33)]
17 Rule 4
18 Rule 4A

designated authorities have to perform their duties as specified in Column of Schedule 7.[19]

The collection, treatment, storage and disposal of hazardous wastes have to be only in authorised facilities. Every occupier handling, or a recycler recycling hazardous wastes or any person who intends to be an operator of a facility, has to make an application in the prescribed form to the Member Secretary, SPCB or the Committee, as the case may be, or the designated officer, for the grant of authorisation for carrying on the said activities. However, if an occupier or a recycler does not have a treatment and disposal facility of his own and is operating in an area under the jurisdiction of a Common Treatment, Storage and Disposal Facility (TSDF), he has to become a member of that facility and send his waste to that facility to ensure proper treatment and disposal, failing which the authorisation granted may be cancelled.

The authorisation is not to be issued unless the occupier or operator of a facility possesses appropriate facilities, technical capabilities and equipment to handle hazardous wastes safely. The authorisation application is to be processed by the Board within 90 days and the authorisation granted or renewed remains in force during the specified validity period, unless suspended, cancelled or revoked earlier. The grant of authorisation may be refused after giving the applicant an opportunity of being heard. The Board or the Committee has to maintain a register containing the particulars of the conditions subject to which the authorisation is granted. The document is open for inspection by any person during office hours.[20] The authorisation may be

19. Rule 4B.
20. Rule 5.

cancelled or suspended if the authorised person fails to comply with its conditions or with any of the provisions of the EPA or these Rules.[21] An appeal against any order of grant or refusal of an authorisation lies with Secretary, Department of Environment of the State Government.[22]

Packaging, labeling, and transport have to be in a manner so that the hazardous nature of waste is easily visible as per the specified colour codes. For transport,[23] the occupier has to obtain no-objection certificate from the Board and provide relevant information to the transporter regarding the hazardous nature of wastes and measures to be taken in case of an emergency.[24]

The identification of the sites for treatment, storage and disposal of hazardous wastes is the joint and several responsibility of the occupier or operator of a facility or any association of occupiers vis-a-vis the State Government. The sites for hazardous waste disposal facility should be determined by the State Government, within thirty days, after receiving the project report by the SPCB including an environmental impact assessment report and details of public hearing along with its recommendations. The State Government has to compile and publish periodically an inventory of such disposal sites and facilities in the state.[25] The occupier or operator is supposed to design and set up the facility as per the guidelines of the Government and its approval, monitoring and regular operation is the responsibility of the Board.[26] The occupier or operator needs to ensure environmentally sound operation of the facility and maintenance of

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21. Rule 6.
22. Rule 18.
23. "Transport" means off-site movement of hazardous waste by air, rail, road or water. [Rule 3(31)].
24. Rule 7.
25. *See* Rule 8.
26. Rule 8A.

records of such operations. They have to send annual reports to the Board or the Committee, as the case may be, which in turn has to compile the information and prepare an inventory of hazardous wastes.[27] In case of any accident, the matter has to be immediately reported, in the prescribed form, to the Board or the Committee.[28]

The import and export of hazardous wastes for dumping or disposal is not permitted under the Rules[29] with the exception of raw material for recycling or reuse. The Ministry of Environment and Forests (MoEF) is the nodal agency to deal with the transboundary movement[30] of hazardous waste which takes place under the responsibility of the concerned authorities and in compliance with the articles of the Basel Convention.[31] The import and export is to be in accordance with the procedure prescribed.[32] In case of illegal movement, the shipment is to be returned to the exporter or the exporting country within thirty days. If this is not possible, the waste has to be disposed of in an environmentally sound manner within thirty days from the date of off-loading in accordance with the procedure laid down by the Board or the Committee in consultation with the Central Pollution Control Board (CPCB). The exporting country has to bear the costs incurred for the disposal of such waste.[33]

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27. *See* Rules 8B and 9.
28. Rule 10.
29. Rule 11.
30. "Transboundary movement" means any movement of hazardous waste or other wastes from an area under the national jurisdiction of one country to or through an area under the national jurisdiction of another country or to or through an area not under the national jurisdiction of any country, provided at least two countries are involved in the movement. [Rule 3(30)].
31. Rule 12. It is important to note that after the amendment of the Rules in the year 2003, the hazardous wastes as specified in Schedule 8 can not be imported or exported under any circumstances.
32. *See* Rules 13, 14.
33. Rule 15.

The occupier, transporter and operator of a facility are liable for damages caused to the environment due to improper handling and disposal of hazardous waste. The occupier and the operator are also liable to reinstate or restore the damaged environment and also to pay fine as levied by the SPCB with the approval of CPCB for the violation of any of these Rules.[34]

The procedure for registration and renewal of registration of recyclers and re-refiners of non-ferrous metal wastes as specified in Schedule 4 or used oil or waste oil has now been provided by the amendment of the Rules in 2003. The CPCB has been given the power in this regard. In case of suspension, cancellation or refusal of registration or renewal by the CPCB, an appeal can be filed, within thirty days, to the Secretary, MoEF, who is expected to decide the matter within ninety days after giving the applicant an opportunity of being heard. The registered recyclers and re-refiners have to maintain a record of wastes purchased, processed and sold and file annual return in the prescribed form to the respective SPCB or the Committee.[35] They have to use only environmentally sound technologies while recycling and re-refining the wastes. Some of these technologies have been specifically mentioned and the MoEF has been empowered to notify, from time to time, specifications and standards to be followed by the recyclers and re-refiners.[36]

The owner or occupier generating specified non-ferrous metal waste or used oil or waste oil of ten tons or more per annum has to sell or auction such wastes to registered re-refiner or recycler only. However, any waste oil which does not meet the specifications laid down in Schedule 6 is not to be auctioned or sold

34. Rule 16.
35. *See* Rule 19.
36. *See* Rule 21.

but is to be disposed of in hazardous waste incinerator. The persons generating waste or auctioneers have to keep in mind the validity period of their certificates of registration and ensure that wastes are not stored for more than ninety days. They have to maintain record of auctions and sales and file annual returns to respective SPCB or Committee.[37]

In *Research Foundation for Science* v. *Union of India*,[38] as per the directions of the apex Court, the MoEF constituted a High Powered Committee with Prof. M.G.K. Menon, former Minister for Science and Technology, Government of India, as its Chairman to examine in depth all matters relating to hazardous wastes and to give its report / recommendations at an early date. The report of the Committee stated, among others, that the containers containing the hazardous waste material including waste oil were found lying at the Inland Container Depot, New Delhi as well as in the yard of the Bombay Port Trust, Bombay. The Court directed the Committee to examine the quantum and nature of this hazardous waste and recommend a mechanism for its safe disposal or re-export to the original exporter.

The Court has passed and issued different interim orders and directions in this case[39] and imposed costs on the Ministry of Labour and the MoEF for causing delay in filing the relevant affidavits and thereby wasting the time of the Court. Realising that it is not in public interest that hazardous waste should be permitted to continue to lie for any long period of time, the Court directed the Union of India to act on the recommendations of the High Power Committee and made it clear that the disposal of the hazardous material should not in any

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37. Rule 20.
38. Writ Petition (c) No. 657 of 1995.
39. For different orders and directions in the case, *see, e.g.* (1999) 1 SCC 223; (2000) 9 SCC 40; (2000) 9 SCC 311.

way lead to any environmental problems and no pollution should be generated. It should be further ensured that the material is given only to those industries who fulfill the necessary requirements relating to environmental safety in terms of processing and containment sites for storage / disposal. Furthermore, no disposal should take place in favour of traders. If there is any importer who had imported the hazardous waste against the orders of the Court, then the Union of India should ensure that such an importer does not benefit from such import. The Court has also directed to issue show cause notice in this case to the importers importing waste oil illegally in the garb of lubricating oil as to why consignment in question should not be ordered to be re-exported or destroyed at their cost, amount spent on analysis in lab be not recovered from them and compensation on 'polluter pays principle' be not taken from them. The Court further directed for the constitution of a Special Committee to examine the effect of import of waste on workers' health.[40]

It is primarily the function of the Board and its officers to take action to stop unauthorised movement / disposal of hazardous waste and they are not required to bring it to the notice of the Court for seeking a direction on the units to stop unauthorised movement and/or disposal of the waste. It is the basic duty of the concerned officers of the Board under relevant pollution laws to ensure that immediate action is taken against any such units that dump hazardous waste or release untreated effluents in violation of the standards and norms laid down for the purpose. They should not just point out the defaults and wrong doings and wait for the Court's directions in a matter which is entirely within their domain under the statutory provisions. In fact, such a

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40. *See* 2003 (8) Scale 118, 213.

course would enable such nefarious activities to be carried out under the pretext that the matter is pending in the Court. It is entirely for the concerned authorities to find out who are the culprits and take stringent and speedy action under the law with determination.[41]

Therefore, in order to give effect to the principles of the Basel Convention, the Central Government has issued HW Rules, 1989 as amended in 2000 & 2003. The Rules apply to the categories of hazardous wastes as specified in the technical annexures of the Rules. If a substance contains excessive levels of, for example, cyanide, lead, copper, mercury, zinc, chromium, nickel, arsenic, phenols or asbestos, it is then subject to regulatory control. The occupier or operator of a facility or recycler dealing in hazardous wastes has to take all measures to ensure that such wastes are properly handled and disposed of without any adverse effect on human health and environment. He is responsible for proper collection, reception, treatment, storage and disposal of these wastes. Moreover, no person can handle hazardous waste without the authorisation granted by the concerned authorities. The State Government, operator or occupier have the responsibility to identify disposal sites after environmental impact assessment. The Government has to make an inventory of disposal sites and ensure reporting of accidents and follow-up operations. Import and export of waste substances have been regulated and import of hazardous waste, except for recycling and reuse, has been prohibited. In case of illegal traffic, the importer or the exporter, as the case may be, has to ensure safe storage and disposal in an environmentally sound manner. The occupier,

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41. *See Suo Motu* v. *Vatva Industries Association, Ahmedabad*, AIR 2000 Gujarat 33. *See also K. Purushotham Reddy* v. *Union of India*, AIR 2002 NOC 138 (Andhra Pradesh).

transporter and operator have been made responsible for any damage caused to the environment due to improper handling and disposal of hazardous waste. They have to ensure restoration of damaged environment. In addition, the occupier and operator are also liable to pay fine.

However, as per current assessments, 4.4 million tones of hazardous wastes are being generated by 13011 industrial units spread over 373 districts of the country. The States of Maharashtra, Gujarat and Tamil Nadu account for over 63% of the total hazardous waste generated in India.[42] Most of this waste is disposed of by the industries in different ways convenient to them in total ignorance of environmental and health concerns. Illegal dumpsites can be seen outside industrial estates, along roadsides and in low-lying areas. Sometimes hazardous waste is disposed of along with municipal wastes or in river and other water courses. These practices have become a major source of widespread pollution of air and water and the ground water resources have been permanently damaged in many areas. Keeping in view the magnitude and gravity of the problem, the industry should abide by the Rules in letter and spirit (regardless of cost considerations) and in case of failure, the competent authorities should take stern action. There is a need for country wide survey and inventorisation of hazardous wastes. The 'recycling loophole' should also be closed to avoid any chances of unlawful dumping.

4.1.2 *Bio-medical Waste (Management and Handling) Rules, 1998*

The Bio-medical Waste (Management and Handling) Rules, 1998[43] (hereinafter called 'BMW Rules') as amended in 2000[44] and 2003[45] apply to all persons

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42. *Annual Report of the MoEF*, 103 (2002-2003).
43. S.O. 630(E), dated July 20, 1998.
44. By S.O. 545(E) dated 2 June, 2000.
45. By S.O. 1069 (E) dated 17th September, 2003.

who generate, collect, receive, store, transport, treat, dispose or handle bio-medical waste (BMW) in any form.[46] Every occupier of an institution including a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory and blood bank has to ensure that BMW generated by it is handled without having any adverse effect on human health and the environment.[47] The waste has to be treated and disposed of in accordance with Schedule 1[48] and as per the standards prescribed in Schedule V and within the time-schedule given in Schedule VI. BMW treatment facilities like incinerator, autoclave and microwave have to be installed.[49] BMW is not to be mixed with other waste and is to be segregated at the point of generation itself. It has to be put into containers / bags in accordance with Schedule II prior to storage, transportation, treatment and disposal and containers are to be labeled as per Schedule III. In case of transportation to any waste treatment facility, only authorised vehicles can be used and additional information as prescribed in Schedule IV has to be furnished. Untreated BMW is not to be stored beyond 48 hours and if necessary to store beyond that period, the permission of the prescribed authority has to be taken.[50]

A prescribed authority has to be established by the State Government or the Union Territory, as the case may be, to ensure implementation of the Rules provided that in case of all health care establishments of the Armed Forces, the Director General, Armed Forces Medical Services, is the prescribed authority.

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46. 'Bio-medical waste' has been defined as any waste which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule 1. [Rule 3(5)].
47. Rule 4.
48. Schedule 1 lays down different treatment and disposal methods for ten categories of BMW.
49. Rule 5.
50. Rule 6.

Every occupier of an institution treating more than one thousand patients per month or operator of a BMW facility has to make an application, in the prescribed form and accompanied with prescribed fee, to the prescribed authority for the grant of authorisation. The authority has power to grant authorisation to an applicant, within ninety days from the date of application and for a period of three years (including a trial period of one year), on being satisfied that the applicant possesses the necessary capacity to handle BMW in accordance with the Rules. The authorisation may also be renewed. The prescribed authority also has the power to refuse to grant or renew authorisation, cancel or suspend it after recording the reasons in writing and giving the applicant an opportunity of being heard.[51]

Every State/Union Territory is required to constitute an Advisory Committee having experts in different fields like medical and health, animal husbandry and veterinary sciences, environmental management, municipal administration and representatives of NGOs and State Boards / Committees to advise the Government of the State / Union Territory and the prescribed authority regarding proper implementation of the Rules.[52] A separate Advisory Committee for the health care establishments of the Armed Forces has also been constituted to advise the Director general.[53] The task of monitoring the implementation of the Rules in Armed Forces health care establishment has been entrusted to CPCB.[54]

The authorised person has to maintain records and submit an annual report to the prescribed authority about the categories and quantities of BMW handled

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51. Rules 7 & 8.
52. Rule 9(1).
53. Rule 9(2).
54. Rule 9A.

during the preceding year. The authority sends this report to the CPCB by 31st March every year.[55] If any accident occurs during handling or transportation of BMW, the authorised person has to inform the prescribed authority.[56]

Any person aggrieved by an order of the prescribed authority has a right of appeal, within thirty days, to such authority as may be constituted by the State Government/Union Territory for this purpose.[57] In case of a person aggrieved by the order of the Director General, Armed Forces Medical Services, an appeal may lie, within thirty days, to the Central Government in the MoEF.[58]

In *Dr. B.L. Wadehra* v. *Union of India*,[59] even prior to the notification of the Rules, the apex Court issued following directions to the concerned authorities for proper management and disposal of BMW in Delhi:

1. The Government of India, Municipal Corporation of Delhi (MCD) and New Delhi Municipal Council (NDMC) should construct and install incinerators in all the hospitals / nursing homes, with 50 beds and above under their administrative control. This may be done preferably within nine months. A responsible officer of each of these authorities shall file an affidavit in this Court within two months indicating the progress made in this respect.
2. The All India Institute of Medical Sciences, New Delhi should install sufficient number of incinerators, or an equally effective alternate, to dispose of the hospital waste. The Director shall file an affidavit within two months to indicate the progress made in this respect.

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55. Rules 10,11.
56. Rule 12.
57. Rule 13(1).
58. Rule 13(2).
59 (1996) 2 SCC 594.

3. The MCD and NDMC should issue notices to all the private hospitals / nursing homes in Delhi to make their own arrangements for the disposal of their garbage and hospital waste. They be asked to construct their own incinerators. In case these hospitals are permitted to use facilities (for collection, transportation and disposal of garbage) provided by the MCD and NDMC then they may be asked to pay suitable charges for the service rendered in accordance with law.

The BMW Rules, 1998 as amended in 2000 and 2003 provide that all hospitals, clinics, dispensaries, nursing homes, veterinary hospitals, diagnostic and pathological laboratories and blood banks have to ensure proper disposal of their BMW so as to avoid harm to human health and environment. The Rules make it mandatory for the doctors to provide for the incinerators, either as a group or individually. Authorisation certificates have to be obtained for collection, storage, treatment and disposal of BMW. BMW has to be segregated at the source itself. Under the Rules, the waste generated by hospitals is divided into ten different categories and the procedure for proper disposal of each category has been laid down. The colour coding and the type of container to be used for the disposal of BMW have been specified. In yellow bag, the treatment is through incinerator / deep burial. In red bag, the treatment is through autoclaving / microwaving / chemical treatment. In blue/white bag, the treatment is through autoclaving / microwaving, chemical treatment and destruction. In black bag, the disposal has to be in secured landfill. All the hospitals including private clinics have to dispose of their BMW through proper disposal facilities. SPCBs have to ensure strict implementation of the Rules. Since the BMW Rules are made under EPA, the penalty for violation can be

imprisonment upto five years and a fine of Rs. 1 lakh. An additional fine of Rs. 5000 per day may be imposed in case of repeated violations. In addition to criminal liability, the hospital management can find it difficult to get health insurance covers and funding from financial institutions if the waste treatment facilities are not set up.

However, in reality, private practitioners in India, except in some exceptional cases, can not even think of building an incineration plant costing Rs. 25 lakh approximately. The result is that only a small portion of the waste gets incinerated and a major portion is left to pile up in the municipal garbage dumps. What to say of private practitioners, the CPCB itself admitted that the operation and maintenance of incinerators in major hospitals in Delhi is very poor resulting in emission of dioxin gas and toxic fumes.[60] Hospitals in Delhi generate around 70 tons of waste every day. About 20 tons of this waste is infected and has human body parts. Most of this waste is dumped in landfills along with municipal waste. It is also doubtful whether the segregation of waste at source is being carried out or not as per the Rules. The authorities have really failed to evolve an effective BMW management system and most of the hospitals, nursing homes and dispensaries continue to release toxins and poisonous gases in the air by burning the waste in the open, and thereby exposing the people to cancer and several other respiratory diseases. The BMW Rules are continuously being violated and they are not even known to hospitals, authorities and doctors. These trends are hazardous to human life since unmanaged medical waste can spread fatal diseases like HIV/AIDS and Hepatitis B and C.

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60. *Six hospitals accused of poor waste disposal*, Times of India (New Delhi) dated 4.12.2000: CSE-India Green File, December 2000, No. 156 at 63.

BMW is generally of two kinds i.e. biodegradable in the form of used bandages, human body parts, blood etc. and non-biodegradable like syringes, plastic bottles, glass items etc. Incinerators are meant to burn the biodegradable waste and they can not adequately handle non-biodegradable waste. The Rules make it mandatory to segregate waste at the point of generation, put it in different specified colour-coded bags before transportation, treatment and disposal, but most of the hospitals are not doing this. As per Rules, only pathological waste like body parts and bandages should be incinerated and non-biodegradable waste like plastics or metals should be shredded and disinfected by an autoclave or a microwave. Since improper disposal of BMW creates a serious health hazard for the community, there is a need for inhouse management practices which will include segregation of waste at source. There is a need of orientation and training for the staff. The services of a common treatment facility can be hired. Medical associations as well as enforcement authorities should ensure proper compliance with the BMW disposal norms. Awareness among people dealing with BMW is necessary. In fact, there is a pressing need to develop a culture on the handling of BMW. It needs to be borne in mind that medical and paramedical staff in the hospitals, apart from the patients and general public, is at the highest risk of infection from untreated hospital waste.

4.1.3 *Batteries (Management and Handling) Rules, 2001*

In exercise of the powers conferred by Sections 6, 8 and 25 of the EPA, the Central Government has notified the Batteries (Management and Handling) Rules, 2001[61] (hereinafter called 'the Rules'). These Rules apply to every manufacturer, importer, reconditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacturing, processing, sale,

61. Vide S.O. 432(E) dated 16th May, 2001.

purchase and use of batteries[62] or components thereof. The manufacturer, importer, assembler and reconditioner have to ensure that used batteries are collected against new batteries sold as per the Schedule. They have to set up collection centres either individually or jointly at various places and ensure that used batteries collected are sent only to registered recyclers through safe transportation without causing any damage to environment. A half-yearly return of the sales and buy-back has to be filed to the SPCB. They have to create public awareness through advertisements, publications and posters etc. regarding hazards of lead, responsibility of consumers and by giving addresses of dealers and designated collection centres. International recycling sign has to be used on the batteries and recycled lead has to be purchased from registered recyclers only. They have also to bring to the notice of the SPCB or the MoEF any violation by the dealers.[63]

The dealer has to ensure collection of used batteries as against the new ones sold. He has to give appropriate discount for every used battery returned by the consumer and file a half-yearly return of the sale and buy-back. He has also to ensure safe transportation of collected batteries to the designated collection centres or to the registered recyclers and that no damage is caused to the environment during storage and transportation of used batteries.[64] Each recycler has to apply for registration to the MoEF or an agency designated by it and ensure strict compliance of the terms and conditions of registration. He has to submit annual returns, make available all records to the SPCB for inspection, mark 'Recycled' on lead recovered by reprocessing and create public awareness.[65]

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62. 'Battery' means lead acid battery which is a source of electrical energy and contains lead metal. [Rule 3(e)].
63. Rule 4.
64. Rule 7.
65. Rule 8.

Every recycler has to follow the prescribed procedure for registration / renewal of registration.[66] The Joint Secretary, MoEF or any officer or agency designated by the Ministry, after ensuring that all the formalities of the application form have been complied with and that the recycler possesses appropriate facilities, technical capabilities, and equipment to recycle used batteries and dispose of hazardous waste generated, grants registration The registration may also be refused, cancelled or suspended after giving the applicant an opportunity of being heard The registration granted remains in force for a period of two years from the date of issue or from the date of renewal unless suspended or cancelled earlier There is a right of appeal against any order of suspension or cancellation or refusal of registration [67] The importers have also to get themselves registered and obtain customs clearance for the import of new lead acid batteries as per the prescribed procedure [68]

It is the responsibility of the consumer or bulk consumer to ensure that used batteries are not disposed of in any manner other than depositing with the dealer, manufacturer, importer, registered recycler, reconditioner or at the designated collection centres.[69] The auctioneer is also required to ensure that used batteries are auctioned to registered recyclers only. He has to maintain a record of such auctions and file half-yearly returns to the SPCB [70] The SPCB has to ensure compliance of the Rules It needs to file an annual compliance status report to the CPCB[71] which in turn compiles and publishes the data received every year from the State Boards CPCB reviews the compliance of

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66 *See* Rule 9.
67. *Ibid.*
68 *See* Rules 5 &6
69 Rule 10
70 Rule 11.
71 Rule 12

the Rules periodically to improve the collection and recycling of used lead batteries and apprise the MoEF.[72] All the records and returns ought to be computerised.[73]

The Rules relating to management and handling of batteries were notified by the MoEF on May 16, 2001 to tackle the estimated 60,000 metric tons of lead illegally recycled in the Indian market. Lead acid batteries which are used in vehicles, industries and uninterrupted power supply systems can no longer be thrown into garbage dumps. As per the Rules, lead acid batteries used by both individuals and bulk consumers have to be returned to battery dealers or the manufacturers at designated collection centres. Battery manufacturers, importers, assemblers or reconditioners have to ensure that they collect as many used batteries for as many new batteries they sell, for which they will have to set up used battery collection centres. They will also have to ensure that no damage is caused to environment during transportation and reprocessing of used batteries. Dealers who sell and receive lead acid batteries to and from consumers should also give appropriate discount for every used battery returned by the consumer.

In order to ensure that battery recyclers comply with environmental norms, the Rules make it mandatory for them to get themselves registered with the MoEF. They should ensure strict compliance with pollution norms and batteries recycled at their units should bear an international 'Recycled' label. The auctioneers are also under a duty to auction / sell used batteries to registered recyclers only. The Rules relating to creation of awareness among masses are of special significance.

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72. Rule 13.
73. Rule14.

Lead is known to produce several neural disorders and cause damage to liver and kidneys. The major cause of lead pollution in India has been the indiscriminate dumping of batteries and improper recycling of lead batteries by unauthorised and unregistered recycling units. In these units, lead smelting is done in small sheds with no environmental concerns including high energy consumption. The Boards should ensure strict compliance with the Rules and violators should be dealt with severely. Moreover, the workers handling the batteries need extra protection. Since even very low doses of lead constitute a health hazard, the rules relating to special protection of workers should be incorporated. One can easily see the workers engaged in Indian factories pulling batteries apart with their bare hands. These trends are extremely hazardous. Although notification of the Rules is a welcome step but there are doubts over their proper enforcement unless the system of organised collection of used batteries is further strengthened.

4.2 Solid Waste Management

According to the recent report of MoEF (a 343 - page document), the quantum of solid waste generated in India has nearly doubled in the last decade from 77 million tons per annum in 1990 to 147.05 million tons in 1999.[74] Delhi produces around 6000 metric tons of solid waste daily while Mumbai generates 5000 tons. Kolkata and Chennai are no better with around 3,500 tons daily.[75] With the population of India reaching one billion, the increased production of municipal solid waste and its disposal have become major problems. While landfill sites are diminishing, volumes of waste are increasing rapidly.

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74. *supra* note 7.
75. *Proper planning eludes solid waste disposal*, Newstime (Hyderabad) dated 18th August, 2001: CSE-India Green File, August 2001, No. 164 at 78.

4.2.1 *Municipal Solid Waste (Management and Handling) Rules, 2000*

In order to overcome the problems of the generation and disposal of municipal solid wastes, the Central Government, while exercising powers conferred on it by Sections 3, 6 & 25 of the EPA, notified Municipal Solid Waste (Management and Handling) Rules, 2000[76] (hereinafter called 'the Rules') These Rules apply to every municipal authority[77] responsible for collection,[78] segregation,[79] storage,[80] transportation,[81] processing,[82] and disposal[83] of municipal solid wastes.[84] The municipal authority is responsible for the development of an infrastructure and implementation of these Rules as per the implementation programme laid down in Schedule 1 The SPCB or the Committee (in case of Union Territory) has been empowered to grant authorisation to the municipal authority or an operator for setting up waste processing and disposal facility including landfilling.[85] Before granting

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76 S O 908(E), dated 25th September, 2000

77 "Municipal authority" means Municipal Corporation, Municipality, Nagar Mahapalika, Nagar Nigam, Nagar Panchayat, Municipal Council including notified area Committee (NAC) or any other local body constituted under the relevant statutes and, where the management and handling of municipal solid waste is entrusted to such agency [Rule 3(xiv)]

78 "Collection" means lifting and removal of solid wastes from collection points or any other location [Rule 3(v)]

79 "Segregation" means to separate the municipal solid wastes into the groups of organic, inorganic, recyclables and hazardous wastes [Rule 3(xxi)]

80 "Storage" means the temporary containment of municipal solid wastes in a manner so as to prevent littering, attraction to vectors, stray animals and excessive foul odour [Rule 3(xxiii)]

81 "Transportation" means conveyance of municipal solid wastes from place to place hygienically through specially designed transport system so as to prevent foul odour, littering, unsightly conditions and accessibility to vectors [Rule 3(xxiv)]

82 "Processing" means the process by which solid wastes are transformed into new or recycled products [Rule 3(xviii)]

83 "Disposal" means final disposal of municipal solid wastes in terms of the specified measures to prevent contamination of ground water, surface water and ambient air quality [Rule 3(viii)]

84 Rule 2 "Municipal solid waste" includes commercial and residential wastes generated in a municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes [Rule 3(xv)]

85 Rule 4(2) "Landfilling" means disposal of residual solid wastes on land in a facility designed with protective measures against pollution of ground water, surface water and air fugitive dust, wind-blow litter, bad odour, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion [Rule 3(xi)]

authorisation for a given period, the views of other agencies like the State Urban Development Department, the Town and Council Planning Department, Air Port or Air Base Authority and the Ground Water Board have to be taken into consideration.[86] The municipality has to submit an annual report to the Secretary-incharge of the Department of Urban Development in case of a metropolitan city or the District Magistrate or the Deputy Commissioner in case of all other towns and cities. A copy of the report has to be forwarded to SPCB or the Committee.[87] The SPCB and the Committees have also to submit an annual report to the CPCB, which in turn has to prepare a consolidated annual review report and forward it to the Central Government along with its recommendations.[88]

The overall responsibility for the enforcement of the Rules lies with the Secretary-incharge of the Department of Urban Development of the State or the Union Territory and in case of a district, with the District Magistrate or the Deputy Commissioner.[89] The standards regarding ground water, ambient air, leachate quality and the compost quality including incineration have been given in Schedules II, III and IV. The SPCB or the Committee has to monitor compliance of these standards in coordination with the CPCB.[90] In case of any accident during handling or transportation of waste, the municipal authority has to report to the Secretary-incharge of Urban Development in metropolitan cities and to the District Magistrate or Deputy Commissioner in all other cases.[91]

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86. Rule 6(2).
87. Rule 4(4).
88. Rule 8.
89. Rule 5.
90. Rule 6(1) & (5).
91. Rule 9.

In *Dr. B.L. Wadehra's case*,[92] the petitioner sought directions of the Court to the Municipal Corporation of Delhi (the MCD) and the New Delhi Municipal Council (the NDMC) to perform their statutory duties in connection with the collection, removal and disposal of garbage and other waste. The Court held :

> It is clear from various provisions of the Delhi Act and the New Delhi Act that the MCD and the NDMC are under a statutory obligation to scavenge and clean the city of Delhi. It is mandatory for these authorities to collect and dispose of the garbage / waste generated from various sources in the city. We have no hesitation in observing that the MCD and the NDMC have been wholly remiss in the performance of their statutory duties. Apart from the rights guaranteed under the Constitution the residents of Delhi have a statutory right to live in a clean city. The courts are justified in directing the MCD and NDMC to perform their duties under the law. Non-availability of funds, inadequacy or inefficiency of the staff, insufficiency of machinery etc. can not be pleaded as grounds for non-performance of their statutory obligation.[93]

In the light of facts and circumstances of the case, the Court issued various directions for the proper disposal of solid waste and hospital waste generated in the Capital. The directions as regards solid waste management may be summarised as under:

1. The Court approved the experimental schemes by MCD and NDMC for distribution of polythene bags, door to door collection of garbage and its disposal and directed that the city of Delhi is to be scavenged and cleaned everyday. The garbage / waste is to be lifted from collection centres every day and transported to the designated place for disposal.

   All receptacles / collection centres are to be kept clean and tidy everyday. The garbage / rubbish is not to be found spread around the collection centres and on the roads.

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92. *supra* note 59.
93. *Id.* at 606, 607.

2. The CPCB and the Delhi Pollution Committee ought to regularly send their inspection teams in different areas to ascertain that the collection, transportation and disposal of garbage / waste is carried out satisfactorily. The Board and the Committee need to file the reports in the Court by way of an affidavit after every two months for a period of two years.

3. The Government of the National Capital Territory (NCT) of Delhi should appoint Municipal Magistrates (Metropolitan Magistrates) under Section 469 of the Delhi Act and Section 375 of the New Delhi Act for the trial of offence under these Acts. Residents of Delhi be educated through Doordarshan and by way of announcements in the localities that they are to be liable for penalty in case they violate any provisions of the Act in the matter of collecting and disposal of garbage and other wastes.

4. The Doordarshan should undertake a programme of educating the residents of Delhi regarding their civic duties under the Delhi Act and the New Delhi Act. This may be done by making appropriate announcements, displays on the television. They may also be informed about the penalties which can be imposed for violation of their duties and obligations under the Acts.

5. The MCD has placed order for the supply of about 200 tippers with the Ordinance Vehicle Factory, Jabalpur (Government of India) in May,1995. The tippers have not as yet been supplied. The Secretary, Ministry of Defence Production, Government of India should ensure the supply of tippers to the MCD as expeditiously as possible and preferably within three months.

6. The MCD has indicated that three Sanitary Land Fill (SLF) sites have already been approved by the Technical Committee of the Delhi Development Authority (DDA) but the same have not been handed over to the MCD by the Development Commissioner. Since Bhatti mines are situated within the ridge area, the same can not be permitted to be utilised for the disposal of the solid waste as at present. The Development Commissioner should hand over the sites to the MCD within three months.

7. The compost plant at Okhla be revived and put into operation by MCD. The MCD should also examine the construction of four additional compost plants.

8. The MCD should not use the filled-up SLFs for any other purpose except forestry. The MCD should develop forests and gardens on these sites.

9. The MCD and NDMC should construct/install additional garbage collection centres in the form of dhalaos/trolley/steelbins within four months.

10. The Union of India and NCT, Delhi Administration should consider the requests from MCD and NDMC for financial assistance in a just and fair manner to enable these authorities to fulfill their obligations under law.

11. After some time it may not be possible to dispose of garbage and solid waste by 'SLF' method due to non-availability of sites. The NCT, Delhi Administration and also the MCD and NDMC should join hands and engage an expert body like NEERI to find out alternate method / methods of garbage and solid waste disposal.

The above stated directions of the Supreme Court are of far reaching significance so far as proper waste disposal is concerned. The rapid industrial

development, urbanisation and continuous flow of persons from rural to urban areas have no doubt made proper waste management a rather difficult task, but at the same time the statutory authorities also can not be permitted to sit back with folded hands and they have to perform the work entrusted to them under law. The Court observed that MCD has a very large force of Karamcharis working for it. There are 38, 311 Safai Karamcharis and more than 1400 Sanitary Inspectors and other Officials. The total area which the MCD is supposed to keep clean and tidy is 1399 26 sq km The simple arithmetic shows that there are 27 Safai Karamcharis and one Sanitary Inspector for one sq km of area. The NDMC is in a still better position It has 2172 Safai Karamcharis and the area under its control is 42 40 sq km which means that it has 50 Karamcharis to man one sq km There is no reason whatsoever why with such a huge manpower at their command the MCD and NDMC can not present a neat and clean Delhi to its residents.

In *Vinod Chandra Varma* v. *State of U.P*,[94] the Allahabad High Court observed that it is common knowledge that nowhere cleaning of the roads, garbage and sewer is done in Allahabad by the Nagar Nigam, although there are about 1800 permanent employees and 800 casual labourers working in the Nagar Nigam for this purpose, but they do not work and if they are told to work they threaten to go on strike. In several localities of Allahabad there is filth and garbage which has piled up causing inconvenience to the passer by and lot of diseases and health hazards. For payment of the salaries of employees, Municipal taxes are imposed on the citizens e.g. house tax and water tax The citizens of Allahabad are paying these taxes without getting any corresponding benefits.

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94. AIR 1999 Allahabad 108.

The Court, therefore, directed the Nagar Nigam authorities to clean the city and sewer lines and repair water pipes etc. and take strong disciplinary action against those Safai Karamcharis and other employees who are not working properly.

In *Sector 14 Resident's Welfare Association* v. *State of Delhi*,[95] regarding the upgradation of sewerage management systems in the trans-Yamuna area of Delhi and certain Sectors of Noida, the Court held that the directions given by the Bhure Lal Committee are final and binding on all. If any organisation fails in carrying out the directions so issued, the persons mentioned as being accountable will have to satisfy this Court as to why appropriate action should not be taken for non-implementation of the directions issued

In *Almitra H. Patel* v. *Union of India*,[96] the Court had earlier constituted a Committee headed by Mr. Asim Burman, Commissioner, Calcutta Municipal Corporation.[97] The Committee was to examine all aspects of urban solid waste management in Class 1 Cities having population over one lakh and was requested to give its report as early as possible. The final report of the Committee was received and it was, in fact, on the basis of this report that the Municipal Solid Waste (Management and Handling) Rules, 1999 were notified

The present writ petition was concerned with the management and handling of solid waste in Delhi.[98] The Court referred to the 14 directions issued in *Dr. B.L. Wadehra case*[99] and observed that it is indeed unfortunate that despite more than sufficient time (nearly four years) having elapsed, the said directions

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95 (1999) 1 SCC 161.

96. (2000) 2 SCC 679.

97. By its order in (1998) 2 SCC 416 under the same title.

98. For different directions of the apex Court in case of other metropolitan cities also, namely, Mumbai, Chennai, Calcutta and Bangalore, *see* under the same title (2000) 2 SCC 166; (2000) 3 SCC 575; (2000) 8 SCC 19.

99. *supra* note 59.

have not been complied with and the condition of Delhi has not improved The citizens of Delhi increasingly suffer from respiratory and other diseases. River Yamuna is highly polluted and garbage and untreated domestic and industrial waste is being either freely dumped into the said river or is left on open land, a large volume of which remains unattended. The Court admitted that keeping a large city like Delhi clean is not an easy task where the floating population which comes in every day is not very small, but then it is not impossible either. What is required is initiative, selfless zeal and dedication and professional pride – elements which are sadly lacking.

The Court cited the example of Surat, which had for the time immemorial, been known to be one of the dirtiest cities in the country. The plague there in 1995 was the result of the filth which had accumulated therein. Nevertheless the effort of one man, the Municipal Commissioner, who worked in the field and in the office with dedication, resulted in not only eradicating the plague and cleaning up Surat but gave the city of Surat the distinction of being the second most clean city of India. The people of Surat who threw garbage all around were so influenced by the tireless effort of one person that they themselves have now become zealous guardians of their new found clean city of Surat. This shows what one man as the head of an organisation, like the Municipal Corporation, with selfless zeal, initiative and dedication and without allowing any outside interference can achieve by motivating his employees to clean up the city while acting fairly, justly and efficiently within the four corners of the law. However, in Delhi, which is the capital of the country and which should be its showpiece no effective initiative of any kind has been taken by the numerous governmental agencies. The Court observed:

> ...We believe it is not for this Court to direct as to how the municipal authorities should carry out their function and resolve difficulties in regard to the management of solid waste. The Court, in fact, is ill-equipped to do so. Without doubt the governmental agencies including the local authorities have all the powers of the state to take action and ensure that the city remains clean. They have only to wake up and act. The Court should, however, direct that the local authorities, Government and all statutory authorities must discharge their statutory duties and obligations in keeping the city at least reasonably clean. We propose to do so now by issuing appropriate directions.

In addition to and not in derogation of the orders passed in *Dr. B.L. Wadehra case*,[100] the Court issued ten time-bound directions to be complied with by the concerned authorities. These directions may be summarised as under:

- The accumulation of any rubbish, filth, garbage or other polluted obnoxious matters in any premises and depositing the same in any street or public place by any person should be prohibited.
- The streets, public premises such as parks etc. should be surface-cleaned on a daily basis, including on Sundays and public holidays.
- The charges and costs should be levied and recovered on the spot from any person littering or throwing rubbish and causing nuisance so as to affect sanitation and public health. The sanitary authorities should prepare a scheme and publish the information regarding such charges / costs. Till the scheme is framed and published, the authorities should recover Rs. 50 as charges and costs from any person littering or violating provisions of the Municipal Corporation Act, Bye-laws and Regulations relating to sanitation and health.
- Proper and scientific disposal of waste in a manner so as to subserve the common good should be ensured and in this connection the suggestions

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100. *Ibid.*

and directions contained in the report prepared by the Asim Burmon Committee should be complied with.

- The landfill sites would be identified, within four weeks, bearing in mind the requirement of Delhi for the next twenty years and the environmental considerations. In identifying the same, the CPCB's advice should be taken into consideration. The sites so identified should be handed over to MCD and/or NDMC within two weeks of the identification, free from all encumbrances and without MCD or NDMC having to make any payment in respect thereof.
- Appropriate steps should be taken to improve the sanitation in the existing slums and to prevent any fresh encroachment or unauthorised occupation of public land for the purpose of dwelling resulting in creation of a slum.
- Eight sites for setting up of compost plants should be identified and made available to MCD / NDMC free of cost which in turn shall take appropriate steps to have the plants established and operative.
- The names, telephone numbers and addresses of the Superintendents of Sanitation and other responsible officers should be regularly published so that the citizens can approach them for any complaint / grievance.
- The Magistrates under Section 20 and/or Section 21 of the Code of Criminal Procedure, 1973 (Cr.P.C.) should be appointed, within six weeks, for each board / circle / ward to ensure compliance and to try the specified offences relating to littering and causing nuisance, sanitation and public health.

- All the authorities concerned, including CPCB, should file compliance reports of these directions within eight weeks from today.

The Court held that any violation of the directions issued is to be viewed seriously.

The Rules cast a duty on every municipal authority to properly manage and dispose of municipal solid wastes. The other higher authorities at the district and State levels, including Pollution Control Boards, have also been made responsible / accountable for the proper implementation of the Rules. The Rules provide for a time bound implementation programme including compliance criteria. The standards for composting, treated leachates and incineration have been laid down to ensure safety and to prevent pollution problems. However, the main thrust of the Rules is on landfilling which is the least preferred option in industrialised countries so far as waste disposal is concerned. Moreover, while framing the Rules, the Central Government has completely ignored the subsidy aspect. Those involved in the treatment of waste and recovering valuable materials from it should get some incentive. Besides, the cost of solid waste management should be borne by the Central Government, the State Government and local bodies equally. 'Waste management fee' may also be charged from individual households and commercial establishments including imposition of heavy fines for littering or throwing garbage etc. in open environment. There should be regular checkings by the concerned authorities.

Uncontrolled urbanisation, overburdened civic bodies, laxity adopted by enforcement authorities, lack of civic sense among the people, besides inadequate technologies, have rendered the problems associated with solid

waste management in India unmanageable. Fragmented management and lack of inter-sectoral coordination have further compounded the problems. The formulation of a policy for 'proper and total' waste management and disposal should include techniques like segregation of waste at source; systematic disposal; awareness, motivation and involvement of the community; participation of NGOs; capacity building of local municipalities; sanitary landfilling and possible marketing of recycled materials like compost and biofertilizers.

4.2.2 *Plastics Manufacture, Sale and Usage Rules, 1999*

In exercise of the powers conferred on it by clause (viii) of sub-section (2) of Section 3 read with Section 25 of the EPA, the Central Government has notified the Plastics Manufacture, Sale and Usage Rules, 1999[101] (hereinafter called 'the Rules'). Under the Rules, a person has been prohibited from manufacturing, stocking, distributing or selling carry bags made of virgin or recycled plastic which are less than 8x12 inches (20x30 cms) in size and 20 microns in thickness. Similarly all the vendors have been prohibited from using carry bags or containers made of recycled plastics for storing, carrying, dispensing, or packaging foodstuffs.[102] However, this prohibition does not apply to the manufacture of carry bags exclusively for export purpose on the basis of an order received for export.[103] Likewise, a person can manufacture carry bags or containers from virgin plastic in natural shade or white. The carry bags and containers can be manufactured from recycled plastic also but they are

101. Vide S.O. 705(E) dated September 2, 1999. As amended by S.O. 698(E) dated 17th June, 2003.
102. Rule 4.
103. Rule 2.

not to be used for storing and packaging food stuffs,[104] pigments and colourants criteria as laid down by the Bureau of Indian Standards should be complied with[105] and they should be marked as 'recycled'.[106] Recycling of plastics has to be undertaken strictly in accordance with the specifications of the Bureau.[107] The minimum thickness of carry bags made of virgin or recycled plastic should not be less than 20 microns.[108]

The Rules relating to manufacture and recycling have to be enforced by the SPCBs (in respect of States) and Pollution Control Committees (in respect of Union Territories) and those relating to the use, collection, segregation, transportation and disposal, by the Collector / Deputy Commissioner of the concerned district.[109] The Rules also cast a duty on Plastic Industry Association to undertake self-regulatory measures.[110]

Every occupier manufacturing carry bags or containers of virgin plastic or recycled plastic or both has to make an application in the prescribed form to the SPCB or the Committee, as the case may be, for the grant of registration or renewal of his manufacturing unit. The registration shall be granted within thirty days of the receipt of application. However, the registration certificate shall not be issued or renewed unless the unit meets the norms prescribed under Rules 5,6,7 and 8 and also possesses a valid consent under the Water Act and the Air Act. The registration once granted remains valid for a period of three years unless revoked, suspended or cancelled earlier. The application for

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104. "Food-stuffs" means ready to eat food articles and food products, fast food, processed or cooked food in liquid, powder, solid or semi-solid form. [Rule 2(e)].
105. Rule 5.
106. Rule 7.
107. Rule 6.
108. Rule 8.
109. Rule 3.
110. Rule 9.

renewal of registration has to be made at least sixty days before its expiry date.[111]

Therefore, after the notification of the Rules, no vendor can now use recycled plastic carry bags or containers for storing, carrying, dispensing or packaging food stuffs. Virgin plastic may be used. This prohibition will prevent adverse health effects of toxic dyes leaching into food. A clear distinction has to be made by the manufacturers between products from 'recycled material' and 'virgin plastic'. However, the Rules have not specifically addressed the issue of proper disposal of plastic waste. Since this waste is non-biodegradable and has the tendency of choking the drains, being eaten up by the cattle and emitting toxic gases if burnt, the proper disposal methods deserve a special mention.

4.3 Management of Chemicals

Chemicals, besides food, air and water, have always been part of man's environment in some measure. Even before the earliest civilizations, the lightning flash caused oxygen and nitrogen of the air to combine, producing oxides of nitrogen and the said nitrogen dioxide eventually combined with water and oxygen to form nitrates that significantly enriched the soil. Volcanoes contributed sulphur dioxide and particulates to the air just as fossil fuel burning power plants do today. But the total contribution from these sources was small and the earth was thinly populated.[112] With the rise of civilizations, increase in population and tremendous growth of industrialisation, the use of man made chemicals has increased significantly. The Indian chemical industry has grown phenomenally since independence. There are today an

111. Rule 10.
112. *Dr. Ashok* v. *Union of India*, (1997) 5 SCC 10, 15.

estimated 4000 chemical factories with an investment of over Rs. 3000 crore which employ 3.8 lakh people. The chemical industry accounts for 20 percent of fixed assets in industry and produces more than Rs. 6000 crore worth of goods every year.[113] With the large scale manufacture and use of these chemicals, the problem of pollution has become worse. The recognition of the harmful effects of these toxic substances on human health and environment, led to the measures for the control of the release of these substances into the atmosphere and prevention of resultant diseases. Since chemicals are now used in every sector of the economy, from agriculture and food to textiles, paper and pharmaceuticals, certain efforts have been made in India to properly regulate the connected activities. There are Rules relating to the manufacture, storage, use and import of hazardous chemicals, hazardous micro-organisms and emergency planning and preparedness.

4.3.1 *The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989*

Besides the Rules framed by the Central Government to ensure proper handling and disposal of hazardous waste, BMW and municipal solid waste, the Rules to regulate the manufacture, storage and import of hazardous chemicals have also been notified by the Central Government under the enabling provisions e.g. Sections 6,8 and 25 of EPA. The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989[114] (hereinafter called 'MSIHC Rules' or 'the Rules') as amended in 1990,[115] 1994[116] and 2000,[117] apply to an industrial

113. LAL'S COMMENTARIES ON WATER & AIR POLLUTION LAWS, 980 (3d ed. 1998).
114. S.O. 966(E) dated 27th November, 1989.
115. By G.S.R. 584(E) dated 19th June, 1990.
116. By S.O. 2882 dated 3rd October 1994.
117. By S.O. 57(E) dated 20th January 2000.

activity involving the usage and storage of specified hazardous chemicals. The list of hazardous chemicals is given in Part II of the Schedule 1. The occupier who has control over an industrial activity involving such chemicals has to show that he has identified the major accident hazards, has taken adequate steps to prevent such accidents and has provided the workers information, training and equipment to ensure their safety.[118] The concerned authority should also inspect the industrial activity at least once in a calendar year.[119] In case of a major accident, the concerned authority as identified in Schedule 5 should be informed by the occupier who in turn should send the information, within 90 days, to the MoEF. The authority should also inform the occupier regarding any lacunae which needs to be rectified.[120]

An occupier undertaking any industrial activity involving the use of specified quantity of a listed hazardous chemical has to report to the concerned authority for grant of approval at least 3 months before commencing the activity. The concerned authority approves the report within 60 days from its receipt. However, if it is of the opinion that there is contravention of the provisions of EPA or Rules made thereunder, it issues a notice under rule 19.[121] If the occupier subsequently makes a change in the threshold quantity of the hazardous chemical, a further report to the concerned authority has to be made.[122] Before undertaking any industrial activity, the occupier has to prepare a safety report containing the information specified in Schedule 8 and has to send a copy of that report to the concerned authority at least ninety days before

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118. Rule 4.
119. Rule 3(a). The authorities, as many as nine in number, have been mentioned in Schedule 5.
120. Rule 5.
121. Rules 6,7.
122. Rule 8.

commencing the activity. After the amendment of the Rules in 1994, it has been made obligatory for the occupiers of both the new and the existing industries to prepare an independent safety audit report with the help of an expert and forward it to the concerned authority. The authority, if it deems fit, may issue an improvement notice under Rule 19 within 45 days.[123] The authority is also empowered to ask for additional information regarding the safety report.[124] If the occupier wants to make any modifications in the industrial activity to which the safety report relates, he has to send a report to that effect to the concerned authority at least 90 days before making those modifications.[125]

The occupier has to prepare an on-side emergency plan detailing how major accidents would be dealt with and including the names of those responsible for safety. He has to ensure that a mock drill of the on-site emergency plan is held every six months and as soon as it is concluded, a detailed report should be made available to the concerned authority.[126] Preparation of off-site emergency plan and keeping it up-to-date is the duty of the concerned authority who should also ensure its rehearsal at least once in a year.[127] The occupier has to inform all persons likely to be affected by a major accident regarding safety measures to be adopted in case of an emergency.[128]

There are provisions relating to disclosure of information and collection, development and dissemination of information. The occupier has to develop a safety data sheet as specified in Schedule 9. The container of a hazardous chemical has to be clearly labeled showing its contents, the name and address

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123. Rule 10.
124. Rule 12.
125. Rule 11.
126. Rule 13.
127. Rule 14.
128. Rule 15.

of the manufacturer or importer, the physical, chemical and toxicological data and in case of a big size container, other accompanying documents.[129]

Any person importing specified hazardous chemicals in India has to inform the concerned authorities at least 30 days before the date of import. He has to inform about the name and address of the person receiving the consignment in India, the port of entry, mode of transport, quantity of chemical to be imported and complete product safety. The concerned authority may either permit the import subject to such directions as it may deem fit or direct to stop the import on safety or environmental considerations. In case the import is permitted, the authority has to inform the concerned Port Authority to safely handle and store hazardous chemicals while off-loading. Any person importing hazardous chemicals has to maintain records as specified in Schedule 10. He has to ensure that transportation from the port to the ultimate destination takes place in accordance with the Central Motor Vehicles Rules, 1989.[130]

If any person contravenes the provisions of the Rules, the concerned authority should serve on him a notice requiring him to remedy the contravention within 45 days clearly specifying the measures to be adopted in this regard.[131] The Central Government has been empowered to make suitable changes in the Schedules.[132]

In *Indian Council for Enviro-Legal Action* v. *Union of India*,[133] the Court ruled that since chemical industries are the main culprits in polluting the environment, there is every need for scrutinising their establishment and

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129. Rules 16,17.
130. Rule 18.
131. Rule 19.
132. Rule 20.
133. (1996) 3 SCC 212, 251.

functioning more rigorously. No distinction should be made in this respect between a large-scale industry and a medium-scale industry. All chemical industries, whether big or small, should be allowed to be established only after taking into consideration all the environmental aspects. Their functioning should be monitored closely to ensure that they do not pollute the environment in their vicinity.

Under the MSIHC Rules, chemicals having acute toxicity values above prescribed levels or capable of producing major accident hazards owing to their physical and chemical properties have been identified as 'hazardous chemicals'. These include, among others, industrial solvents, dye-stuffs and dye-intermediates and pesticides. These chemicals produce toxic effects through oral ingestion, skin contact or inhalation. Their release into the environment causes pollution of air, water and soil thereby posing a serious risk to man, animals, plants and environment in general. Therefore, the regulation of manufacture, storage and import of hazardous chemicals should be considered as a step in the right direction. The Rules cover most of the chemical and petro-chemical industries which use flammable, explosive, toxic and reactive chemicals. The provisions relating to reporting of accidents, preparation of material safety data sheets, conduct of periodic safety audit, labeling of containers, reporting of imports, approval of sites for carrying on industrial activity and preparation of on-site and off-site emergency plans are some of the significant features of the Rules. However, the responsible authorities should ensure proper implementation of the MSIHC Rules. These authorities need to be further trained and strengthened. Chemicals threaten us with allergies, poisoning, cancer, genetic mutation and damage to our reproductive, nervous

and immune systems. Since hazardous chemicals can attack individuals, whole populations and even future generations, if disasters are really to be prevented, there is an urgent need for accurate scientific modeling of their potential long-term impacts on human health and environment.

4.3.2 *Chemical Accidents (Emergency Planning, Preparedness & Response) Rules, 1996*

In order to develop an emergency planning and response system in case of chemical accidents[134] in India, the Central Government has made Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996[135] (hereinafter called 'the Rules') as amended in 1998.[136] The Rules provide for a four tier crisis management set up at the local, district, state and central level. The composition of the Local Crisis Group has to be in accordance with Schedule 8 with the Sub-divisional Magistrate / District Emergency Authority as the Chairperson. This group is the body in the industrial pocket[137] to deal with chemical accidents and coordinate efforts in planning, preparedness and mitigation of a chemical accident.[138] The group is to meet every month and forward a copy of the proceedings to the District Crisis Group.[139] In order to deal with major chemical accidents[140] and to provide expert guidance for

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134. "Chemical accident" means an accident involving a fortuitous, or sudden or unintended occurrence while handling any hazardous chemicals resulting in continuous, intermittent or repeated exposure to death or injury to, any person or damage to any property but does not include an accident by reason only of war or radio-activity. [Rule 2(a)].
135. Vide G.S.R. 347(E) dated 1st august, 1996.
136. By G.S.R. 578(E) dated 9th September, 1998.
137. "Industrial pocket" means any industrial zone earmarked by the Industrial Development Corporation of the State Government or by the State Government. [Rule 2(d)].
138. Rule 10.
139. Rule 8(4).
140. "Major chemical accident" means an occurrence including any particular major emission, fire or explosion involving one or more hazardous chemicals and resulting from uncontrolled development in the course of industrial activity or transportation or due to natural events leading to serious effects both immediate or delayed, inside or outside the installation likely to cause substantial loss of life and property including adverse effects on the environment. [Rule 2(f)].

handling chemical accidents at different levels, the District Crisis Group is to be constituted at the district level as per the composition specified in Schedule 7 under the Chairmanship of the District Collector;[141] State Crisis Group at the state level as per the composition specified in Schedule 6 under the Chief Secretary as the Chairperson;[142] and a Central Crisis Group at the central level as per the composition specified in Schedule 5 under the Secretary, Government of India as the Chairperson.[143] The District Crisis Group has to meet every forty-five days and send a report to the State Crisis Group. The State Crisis Group is to meet at least once in three months and Central Crisis Group at least once in six months and follow such procedure for transaction of business as they deem fit. All these groups have to perform their respective / specified functions within the area of their jurisdiction to ensure proper planning, prevention, preparedness and mitigation regarding chemical accidents. They have also been made accountable to each other as per their hierarchical position.

Besides constitution of the above stated Crisis Groups, the Rules made it obligatory for the Central Government to set up a Crisis Alert System within thirty days from the date of the commencement of the Rules.[144] This system includes setting up of a functional control room, an information net working system and appointment of adequate staff and experts to man the functional control room; publication of a list of Major Accident Hazard (MAH) installations,[145] a list of major chemical accidents in chronological order and a

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141. *See* Rules 8 & 9.
142. *See* Rules 6 & 7.
143. *See* Rules 3 & 5.
144. Rule 3(1).
145. "Major Accident Hazard (MAH) Installations" means isolated storage and industrial activity at a site, handling (including transport through carrier or pipeline) of hazardous chemicals equal to or in excess of the threshold quantities specified in Column 3 of Schedules 2 and 3 respectively. [Rule 2(g)].

list of members of the Central, State and District Crisis Groups; and taking of measures to create awareness amongst the public with a view to preventing chemical accidents.[146] The MAH installations have to aid and assist District and Local Crisis Groups in their functioning.[147] There is a provision for providing information to the public regarding chemical accidents.[148]

As on date, there are 1460 MAH units in 19 states of the country. As per the latest report, 1395 on-site plans and 118 off-site plans have been prepared. All the states except Bihar and Jammu & Kashmir have constituted State Level Crisis Groups. A country report on "Status of Emergency Preparedness and Response in MAH Districts in the Country" has been prepared. This study was undertaken to assess the Emergency Preparedness and Response Systems existing in the country. The study has observed that the status of emergency preparedness in the country needs improvement at different levels. Immediate upgradation of availability of information, availability of resources to respond to fire emergencies, availability of hospitals with poison treatment facilities and other responses have been recommended for those districts having maximum MAH units.[149]

Several cases of chemical accidents involving isolated storage have come to light in the recent past. In this regard, lack of inventorisation of such storage and poor enforcement of legal provisions have been identified as the major factors.[150] There is, therefore, an urgent need for dissemination of information, conducting of workshops / trainings and creation of awareness among concerned authorities, state officials, industry representatives and the public. Strict enforcement of the Rules is necessary to prevent chemical accidents in

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146. Rule 4.
147. Rule 12.
148. Rule 13.
149. *supra* note 42, at 102.
150. *Ibid.*

the country and to avoid the situations like those that occurred at Bhopal in 1984 or Seveso, Italy in 1976.

4.3.3 *The Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms / Genetically Engineered Organisms or Cells Rules, 1989*

While discussing the Rules relating to hazardous substances in India, it is necessary to mention the Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms / Genetically Engineered Organisms or Cells Rules, 1989[151] (hereinafter called 'the Rules'). These Rules apply to the manufacture, storage, sale, processing, import, export, packaging and repackaging of micro-organisms and gene-technological products. The Rules also apply to the production, manufacture etc. of drugs and pharmaceuticals and food-stuffs distilleries and tanneries etc. which make use of micro-organisms / genetically engineered micro-organisms in one way or the other.

The above stated activities are to be regulated through different committees which are competent authorities under the Rules.[152] The various committees with their respective powers and functions are given below :

1. Recombinant DNA Advisory Committee (RDAC): To review developments in Biotechnology at national and international level and make recommendations for safety regulations in India. The Committee functions in the Department of Biotechnology.
2. Review Committee on Genetic Manipulation (RCGM): To monitor safety aspects of on-going research projects and activities involving genetically engineered organisms / hazardous micro-organisms. To

151. G.S.R. 1037(E) dated 5th December, 1989. Came into force on 1st October, 1993 vide S.O. 677(E) dated 13th September, 1993.

152 Rule 4.

bring out manuals of guidelines to ensure environmental safety. It also functions in the Department of Biotechnology.

3. Institutional Biosafety Committee (IBSC): To update on-site emergency plan according to the manuals / guidelines of the RCGM. This Committee is to be constituted by an occupier or any person including research institutions handling micro-organisms / genetically engineered organisms.

4. Genetic Engineering Approval Committee (GEAC): To approve the activities involving large scale use of hazardous micro-organisms and recombinants in research and industrial production from the environmental angle. This Committee functions under the Department of Environment, Forest and Wildlife.

5. State Biotechnology Co-ordination Committee (SBCC): To review periodically the safety and control measures in various industries / institutions. To inspect, investigate and take punitive action in case of violations of statutory provisions.

6. District Level Committee (DLC): To monitor safety measures in the districts under the control of District Collectors and to report to the SBCC and GEAC.

Under the Rules, animal pathogens and plant pests are the two major heads of micro-organisms or genetically engineered organisms, products or cells.[153] Their import, export, transport, manufacture, process, use or sale can only be with the approval of GEAC. Any person using them has to obtain a licence from GEAC. Their use for research in laboratories is to be notified by MoEF and they may be carried out of those laboratories only under the supervision of

153. *See* Rule 5.

IBSC.[154] Their production commences only with the consent of GEAC and no deliberate or unintentional release into the environment should be allowed. However, in some special cases, their deliberate release may be approved by GEAC [155]

All the approvals of GEAC are to be for a specified period not exceeding four years at the first instance renewable for two years at a time. The GEAC has power to revoke the approval in specified situations and supervise the implementation of the terms and conditions of approvals through SBCC or DLC or any person authorised in this behalf [156]

If an order is not complied with, the DLC or SBCC may take measures at the expense of the person responsible. Where immediate intervention is required in order to prevent any damage to environment, nature or health, necessary steps may be taken without issuing any orders or notice and the assistance of any other governmental authority may be sought [157] The occupier has to furnish such information as may be required including financial conditions and accounts and GEAC may fix fees to cover the expenses incurred by the authorities in connection with approval, examination, supervision and control [158] Any person aggrieved by a decision of GEAC / SBCC may prefer an appeal, within thirty days of the decision, to the appellate authority appointed by MoEF.[159] The MoEF may exempt an occupier from Rules 7-11.[160]

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154. Rule 7.
155. Rule 9.
156. Rules 13, 14.
157. Rule 15.
158. Rule 18.
159. Rule 19.
160. Rule 20.

Genetic engineering and modification involve scientific techniques and experimentation. For a student of law, it is important to the extent that he is aware of an area of activity where the law that regulates the engineering or modification of genes may apply or be relevant. There is a need to regulate these activities because certain organisms are pathogenic i.e. capable of producing diseases if they escape. Moreover, if they fall into the wrong hands, they have the potential of being used as biological agents in war or by terrorists.

4.4 Relevant Notifications

Besides the Rules framed under the enabling provisions of EPA, the Central Government has also issued certain notifications specifically addressing the issues relating to hazardous substances. Some of these notifications may be quoted to give an idea of administrative efforts made in India to regulate the problem.

4.4.1 *Prohibition on Use of Benzidine-Based Dyes and its Salts*

In exercise of the powers conferred by clause (d) of sub-section (2) of Section 6 of the EPA, read with Rule 13 of the Environment (Protection) Rules, 1986 (hereinafter EPR), the Central Government prohibited and restricted the use of benzidine-based dyes and its salts in the dying and colour processing industries. These chemical substances were classified as 'prohibited substances' and their use was required to be discontinued within three years from the date of issue of notification.[161]

4.4.2 *Criteria for Labeling Certain Products as Environment Friendly Products*

The notifications issued by the MoEF laying down the criteria for labeling certain products as Environment Friendly Products are important. These

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161. S.O. 881(E) dated 31st October, 1989, Extra., Pt. II, Sec. 3(ii), dated 31st October, 1989, p. 2; *see also* S.O. 108(E), dated 30th January 1990, Extra., Pt. II, Sec. 3(ii), dated 30th January, 1990, pp. 2-3.

notifications provide general as well as specific requirements to be complied with in the manufacture, packaging and use of the following products so as to ensure quality safety and performance:

(i) Aerosol Sprays;[162]

(ii) Wood Substitutes;[163]

(iii) Paper;[164]

(iv) Architectural Paints;[165]

(v) Detergents;[166]

(vi) Plastic;[167]

(vii) Packaging Material / Package (Part-1 Paper, Paper Board and Plastics excluding Laminates);[168]

(viii) Textiles;[169]

(ix) Cosmetics;[170]

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162. G.S.R. 588(E), dated 10th June, 1992, Extra., Pt. II, Sec. 3(i), dated 11th June, 1992, p. 2, No. 260.
163. G.S.R. 589(E), dated 10th June, 1992, Extra., Pt. II, Sec. 3(i), dated 11th June, 1992, pp. 3-4, No. 260; G.S.R. 216(E), dated 17th May, 1996, Extra., Pt. II, Sec. 3(i), dated 18th May, 1996, p. 8, No. 170.
164. G.S.R. 109(E), dated 19th February, 1992, Extra., Pt.II, Sec. 3(i), dated 19th February, 1992, p. 2; G.S.R. 867(E), dated 9th November, 1992, Extra.,Pt. II, Sec. 3(i), dated 13th November, 1992, p. 2, No. 455.
165. G.S.R. 110(E), dated 19th February, 1992, Extra., Pt. II, Sec. 3(i), dated 19th February, 1992, pp. 3-4; G.S.R. 868(E), dated 9th November, 1992, Extra.,Pt.II, Sec. 3(i), dated 13th November, 1992, pp. 3-4, No. 455.
166. G.S.R. 706(E), dated 15th November, 1991, Extra., Pt. II, Sec. 3(i), dated 29th November, 1991, pp. 3-4; G.S.R. 440(E), dated 27th April, 1992, Extra., Pt. II, Sec. 3(i), dated 28th April, 1992, pp. 3-4, No. 188.
167. G.S.R. 480(E), dated 6th May, 1992, Extra., Pt. II, Sec. 3(i), dated 7th May, 1992, pp. 2-3, No. 205. For Plastic Products *see* G.S.R. 518(E), dated 10th June, 1992; G.S.R. 220(E), dated 17th May, 1996, Extra., Pt.II, Sec. 3(i), dated 18th May, 1996, pp. 19-20, No. 170.
168. G.S.R. 707(E), dated 16th July 1992, Extra., Pt. II, Sec. 3(i), dated 3rd August, 1992, pp. 3-4, No. 333; G.S.R. 621(E), dated 6th September, 1995, Extra., Pt. II, Sec. 3(i), dated 7th September, 1995, pp. 5-6, No. 364.
169. G.S.R. 708(E), dated 16th July 1992, Extra., Pt. II, Sec. 3(i), dated 3rd August, 1992, pp. 4-5, No. 333; G.S.R. 200(E), dated 1st May, 1996, Extra., Pt. II, Sec. 3(i), dated 4th May, 1996, pp. 5-8, No. 157.
170. G.S.R. 768(E), dated 24th August 1992, Extra., Pt. II, Sec. 3(i), dated 16th September, 1992, pp. 2-4, No. 374; G.S.R. 218(E), dated 17th May, 1996, Extra., Pt. II, Sec. 3(i), dated 18th May, 1996, pp. 10-11, No. 170.

(x) Food Items, namely Beverages, Infant Foods and Processed Fruits and Vegetable Products,[171]

(xi) Food Additives,[172]

(xii) Packaging Material / Package, Part-II Laminates and its Products,[173]

(xiii) Architectural Paints and Powder Coatings,[174]

(xiv) Lead Acid Batteries,[175]

(xv) Aerosol Propellants,[176]

4 4 3 *Notifications Relating to Coastal Regulation Zone (CRZ)*

The Central Government vide S O 114(E), dated 19th February, 1991 declared coastal stretches as Coastal Regulation Zone (CRZ) and imposed restrictions on the setting up and expansion of industries, operations and processes in the said zone [177] However, in view of the objections filed, the Central Government amended the notification[178] and in exercise of the powers conferred by Section 3(1) & (2)(v) of the EPA read with Rule 5(3) & (4) of EPR, permitted certain activities in the zone in public interest after Environmental Impact Assessment

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171 G S R 789(E), dated 28th September 1992, Extra, Pt II, Sec 3(i), dated 30th September, 1992, pp 2-3, No 391, G S R 624(E), dated 6th September, 1995, Extra, Pt II, Sec 3(i), dated 7th September, 1995, pp 12-14, No 364

172 G S R 68(E), dated 8th February 1993, Extra, Pt II, Sec 3(i), dated 15th February, 1993, pp 5-7, No 50, G S R 215(E), dated 17th May, 1996, Extra, Pt II, Sec 3(i), dated 18th May, 1996, pp 6-7, No 170

173 G S R 425(E), dated 18th May 1993, Extra, Pt II, Sec 3(i), dated 21st May, 1993, pp 3-4, No 176, G S R 622(E), dated 6th September, 1995, Extra, Pt II, Sec 3(i) dated 7th September, 1995, pp 7-8, No 364

174 G S R 623(E), dated 6th September 1995, Extra, Pt II, Sec 3(i), dated 7th September, 1995, p 10, No 364

175 G S R 625(E), dated 6th September 1995, Extra, Pt II, Sec 3(i), dated 7th September, 1995, pp 15-16, No 364

176 G S R 90(E), dated 8th February 1994, Extra, Pt II, Sec 3(i), dated 10th February, 1994, pp 2-3, No 65, G S R 219(E), dated 17th May, 1996, Extra, Pt II, Sec 3(i), dated 18th May, 1996, pp 14-17, No 170

177 The notification has been made operative by the Supreme Court in *Indian Council for Enviro-Legal Action* v *Union of India*, (1996) 5 SCC 281 *See also S Jagannath* v *Union of India*, (1997) 2 SCC 87, *Bittu Sehgal* v *Union of India*, (2001) 9 SCC 181, *Goa Foundation Goa* v *Diksha Holdings Pvt Ltd*, AIR 2001 SC 184

178 *See* S O 494(E), dated 9th July, 1997, Extra, Pt II, Sec 3(ii), dated 9th July, 1997, pp 4-6, No 393

Report and on approval of concerned authorities Therefore, the notification has been amended from time to time in public interest [179]

4 4 4 *Prohibition on Open Burning of Waste Oil*

In exercise of the powers conferred by Section 6(2)(d) of EPA, read with Rule 13 of the EPR, the Central Government prohibited the open burning of waste oil throughout India on the ground that this practice was toxic and detrimental to human health and the environment and it was necessary to prohibit it [180]

4 4 5 *Prohibition on the Imports of Specified Hazardous Wastes*

In exercise of the powers conferred by Section 3(1) and Section 6(2)(d) of the EPA, read with Rule 13 of the EPR, the Central Government prohibited the import of wastes containing beryllium, selenium, chromium (hexavalent), thallium, and pesticides, herbicides and insecticides and their intermediates / residues thereof including outdated pesticides on the ground of being hazardous and toxic to human health and the environment [181]

4 4 6 *Constitution of an Authority*

In exercise of the powers conferred by Section 3(1) & (3) of the EPA, the Central Government constituted an authority, known as the Environment Pollution (Prevention and Control) Authority, for the National Capital Regional

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179 For further amendments *see* S O 873(E) dated 30th September 1998 Extra , Pt II Sec 3(ii), dated 30th September, 1998 p 2, No 650, S O 998(E), dated 30th September, 1999, Extra , Pt II, Sec 3(ii), dated 30th September, 1999, pp 2-3, No 601, S O 900(E), dated 29th September 2000, Extra , Pt II, Sec 3(ii), dated 29th September, 2000, p 2, No 640, S O 329(E), dated 12th April, 2001, Extra , Pt II, Sec 3(ii), dated 12th April, 2001, pp 4-7, No 237, S O 988(E), dated 3rd October, 2001, Extra , Pt II, Sec 3(ii), dated 3rd October, 2001, pp 2-3, No 728, S O 550(E), dated 21st May 2002, Extra , Pt II, Sec 3(ii), dated 21st May, 2002, pp 4-8, No 470, S O 52(E), dated 16th January, 2003, Extra , Pt II, Sec 3(ii), dated 17th January, 2003, pp 3-4, No 47, S O 838(E), dated 24th July, 2003, S O 460(E), dated 22nd April, 2003, Extra , Pt II, Sec 3(ii), dated 22nd April, 2003, pp 3-4, No 376

180 S O 329(E), dated 15th April, 1997, Extra , Pt II, Sec 3(ii), dated 15th April, 1997, pp 1-2, No 253

181 S O 330(E), dated 15th April, 1997, Extra , Pt II, Sec 3(ii), dated 15th April, 1997, pp 2-3, No 253

(NCR)[182] for a period of two years[183] from the date of notification. The authority was constituted under the Chairmanship of Shri Bhure Lal with three Members and one Convenor. It was to exercise specified powers and perform specified functions for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution. Some of its powers included the following :

1. To issue directions under Section 5 of the EPA in respect of standards for emission or discharge of environmental pollutants from various sources; restriction of areas in which any industries, operations or processes or class of industries or processes shall not be carried out or shall be carried out subject to certain safeguards; procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents; and procedures and safeguards for the handling of hazardous substances.
2. To ensure compliance of specified emission standards by vehicles for the purpose of controlling vehicular pollution.
3. To ensure maintenance of specified ambient noise standards.
4. The power of entry, inspection, search and seizure under Section 10 of EPA.
5. The power to take samples under Section 11 of EPA.
6. The power to make complaints under Section 19 of EPA against offences and for non-compliance of directions issued by it.

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182. S.O. 93(E), dated 29th January, 1998, Extra., Pt. II, Sec. 3(ii), dated 29th January, 1998, pp. 3-5, No. 69.
183. For the words 'for a period of two years', the words 'for a period of four years' were substituted vide S.O. 68(E), dated 25th January, 2000, Extra., Pt. II, Sec. 3(ii), dated 25th January, 2000, p. 1, No. 52.

The authority has to function under the supervision and control of the Central Government. It is expected to furnish a progress report of its activities at least once in two months to the Central Government. The tenure of the authority has now been extended upto January, 2006.

4.4.7 *Delegation of Power*

In exercise of the powers conferred by Section 23 of EPA, the Central Government delegated the powers vested in it under Section 5 of the EPA, to the Chairman, SPCBs (25 States) and Committees (7 Union Territories), to issue directions to any industry or any local or other authority for the violation of the standards and Rules relating to bio-medical waste, hazardous chemicals, industrial solid waste and municipal solid waste including plastic waste.[184]

4.4.8 *National Awards for Taking Significant Measures to Prevent Pollution*

The Central Government introduced a scheme of awards to encourage the industries that undertake significant measures like use of clean technologies, products or practices etc. to prevent pollution and find innovative solutions to environmental problems. The industries include highly polluting industries as well as small scale industries handling hazardous chemicals which take effective measures to reduce the risk to the community living in their vicinity.[185]

4.4.9 *Environmental Impact Assessment*

The assessment of environmental effects of a developmental or industrial activity has been an implicit part of any civilised decision making process. Evaluation of environmental harm is a pre-requisite in deciding whether or not to grant permission for a proposed activity. Environmental Impact Assessment (EIA) is basically an information gathering exercise which enables the

184. S.O. 327(E), dated 10th April, 2001, Extra., Pt. II, Sec. 3(ii), dated 12th April, 2001, pp. 2-3, No. 235.
185. G.S.R. 736(E), dated 26th August, 1992, Extra., Pt. II, Sec. 3(i), Sl. No. 355.

concerned authorities to understand the environmental effects of a proposed activity. This exercise necessarily involves the use of best possible sources of information, best techniques, expert advise, opinion of the members of the public likely to be affected by the proposed activity and sometimes the opinion of independent third parties also. An objective decision can be taken only after a systematic analysis of all the relevant facts.

EIA is an exercise of evaluating and predicting future changes caused by proposed projects, plans or policies to the quality of the environment. It helps administrative agencies to make correct and environmentally sound decisions Sometimes the projects or policies are either modified or abandoned when in an assessment they are found likely to result in significant adverse effects upon the quality of environment. EIA is a tool not only for identifying potential damage but also for probing methods of preventing such damage. The process is rooted in the principle that prevention is better than cure and carries the warning 'look before you leap'. Bhopal disaster is the glaring example of how absence of a well-thought out safety mechanism could lead to grave consequences. Needless to say that prevention ensures not only ecological success but also economic success since prevention is not only better than cure but also in many cases cheaper.[186]

EIA has featured in many international and national documents. The Stockholm Declaration, 1972 did not specifically include this obligation, but in Principles 14 and 15 it referred to the need for rational planning as 'an essential tool' to protect and improve the environment and to avoid adverse effects on the environment. In 1985, EC issued a Directive on EIA.[187] In 1991, the

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186. *See* P. Leelakrishnan, *Environmental Impact Assessment : Legal Dimensions*, 34:4 J.I.L.I., 541 (1992).
187. Council Directive 85/33 EEC, OJEC, 5th July, 1985, at 40.

Convention on Environmental Impact Assessment in a Transboundary Context (Espoo)[188] introduced an absolute obligation of EIA procedure. It provided that the parties... mindful of the efforts of international organisations to promote the use of environmental impact assessment both at the national and international levels... have to take the necessary legal, administrative or other measures to implement the provisions of this Convention, including, ...the establishment of an environmental impact assessment procedure that permits public participation and preparation of the environmental impact assessment documentation described in Appendix II... and ensure that an environmental impact assessment is undertaken prior to a decision to authorise or undertake a proposed activity listed in Appendix I that is likely to cause a significant adverse transboundary impact.[189] Similarly, Principle 17 of the Rio Declaration states:

> Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

At the national level, about 70 percent of the world states have adopted the EIA requirements.[190]

However, the EIA processes vary from nation to nation. Broadly, they can be classified under two heads:[191]

(i) The statutory mandatory model, and

(ii) The administrative discretionary model.

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188. 30 ILM 802 (1991).
189. *See* the Preamble and Article 2 of the Espoo.
190. K.R. Gray, *International Environmental Impact Assessment, Potential for Multilateral Environmental Agreement*, 11 Colorado Journal of International Environmental Law & Policy, 83, 89 (2000).
191. *supra* note 186. *See also* S. Indira Devi, *Environmental Impact Assessment*, 2 Supreme Court Journal, 35 (1995).

In the mandatory model, the scope, nature and limits of discretion and the procedure in which the impact assessment is carried out are governed by legislation There may be specific legislation or delegated legislation obliging the decision maker to assess the impact or review the assessment This model denotes the compulsory need to make impact assessment before development proposal is approved, industrial licence or permit granted or project sanctioned The law confers on the administrative agency a power coupled with duty to make an impact assessment The National Environmental Policy Act, 1969 of the U S represents the best example for the statutory mandatory model of EIA

In the administrative discretionary model, all matters are left to be decided by the administrative agency and are controlled only by executive policy, administrative discretion and political expediency There may not be an enacted law to impose on the authority the compulsion to consider objective criteria The discretionary model derives strength not from any law but from the discretionary powers of the administration The Bhopal gas tragedy in India became a typical example of the grave consequences of the lacunae in the legal system following an administrative discretionary model and highlighted the need for a mandatory model of an open EIA

In view of the evils generated by the existing system, a changeover to the legislative mandatory model has been acutely felt in India The phenomenal growth of environmental action groups and the obvious concern of the judiciary[192] were the two positive factors that supported the introduction of

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192 For different directions of the Indian courts in this regard, *see Rural Litigation and Entitlement Kendra* v *State of U P*, AIR 1985 SC 652, 656, *M C Mehta* v *Union of India*, AIR 1987 SC 965, 966, AIR 1987 SC 1086, 1089, 1091, AIR 1988 SC 1037, 1047, 1048, AIR 1988 SC 1115, *Subhash Kumar* v *State of Bihar*, AIR 1991 SC 420, 424, *Damodhar Rao* v *Municipal Corporation Hyderabad*, AIR 1987 A P 171, 181, *Attakova Thangal* v *Union of India*, 1990 K L T 580, 583, *Environmental and Ecological Protection Samithi* v *Executive Engineer*, 1991(2) K L T 571, 574, *V Lakshmipathy* v *State of Karnataka*, AIR 1992 Karnataka 57, 70, and *Tarun Bharat Sangh* v *Union of India*, AIR 1992 SC 514, 518, 519 (Note The above stated cases have been cited by the author of *supra* note 186)

legislative EIA model in India. In fact, the late eighties and early nineties witnessed a few attempts in India towards evolving a mandatory model and a better regime of environmental protection.[193] Rule 5(1) of the EPR, 1986 provided that while prohibiting or restricting the location of industries and carrying on of processes and operations in different areas, the Central Government may take into account the following factors:

i. Standards for quality of environment in an area.

ii. The maximum allowable limits of concentration of various pollutants (including noise) for an area.

iii. The likely emission or discharge of environmental pollutants from an industry, process or operation proposed to be prohibited or restricted.

iv. The topographic and climatic features of an area.

v. The biological diversity of the area which needs to be preserved.

vi. Environmentally compatible land use.

vii. Net adverse environmental impact likely to be caused.

viii. Proximity to a protected area.

ix. Proximity to human settlements. And

x. Any other factors relevant to the protection of the environment in an area.

Similarly, by way of an amendment in 1987 in the Factories Act, 1948, Section 41A was incorporated which empowered the State Government to constitute a Site Appraisal Committee. The Committee had to make its recommendations to the State Government regarding the initial location of a factory involving hazardous process or for the expansion of any such factory. Moreover, under Rule 8(3) of the HW Rules, 1989, the State Government, occupier or any

193. *supra* note 186, at 559.

association of occupiers had to undertake an EIA study before selecting a site for hazardous waste disposal facility. All this was done prior to a significant notification issued by the MoEF on 27th January, 1994[194] which made EIA a mandatory requirement.

The notification directed that a new project listed in Schedule-1[195] or the expansion or modernisation of any existing industry shall not be undertaken unless it has been accorded an environmental clearance by the Central Government in accordance with the specified procedure. A person who desires to undertake any such activity has to make an application in the proforma specified in Schedule II to the Secretary, MoEF. The application is to be accompanied by an EIA Report, Environment Management Plan and details of public hearing as specified in Schedule IV. However, public hearing is not required in respect of small scale industrial undertakings located in notified / designated industrial areas / industrial estates, or areas earmarked for industries under the jurisdiction of industrial development authorities; widening and strengthening of highways; mining projects (major minerals) with lease area upto twenty-five hectares; units located in Export Processing Zones, Special Economic Zones; and modernisation of existing irrigation projects. But for pipeline and highway projects, public hearing is required to be conducted in each district through which the pipeline or highway passes through.

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194. S.O. 60(E), dated January 27, 1994, Extra., Pt. II, Sec. 3(ii), dated 27th January, 1994, pp. 4-7, No. 42. For further amendments in the notification, *see* S.O. 356(E) dated 4th May, 1994; S.O. 318(E), dated 10th April, 1997; S.O. 319(E), dated 10th April, 1997; S.O 73(E), dated 27th January, 2000; S.O. 1119(E), dated 13th December, 2000; S.O. 737(E), dated 1st August, 2001; S.O. 1148(E), dated 21st November, 2001; S.O. 632(E), dated 13th June, 2002; S.O. 1009(E), dated 18th September, 2002; S.O. 248(E), dated 28th February, 2003; and S.O. 506(E), dated 7th May, 2003.

195. Schedule 1 lists 29 projects including chemical fertilizers, pesticides (technical) and intermediates, petrochemicals, bulk drugs and pharmaceuticals, including intermediates, synthetic rubber, asbestos and mining projects etc.

One time opportunity may be given to the applicant to complete the data and submission of incomplete data for the second time would itself be a sufficient reason for the Impact Assessment Agency to reject the case summarily Site clearance by the Central Government is needed in case of specified projects e g mining, pit-headed thermal power stations, hydro-power, major irrigation projects, ports and harbours (excluding minor ports) and greenfield airports, petrochemical complexes, refineries and mega thermal power plants

The project report has to be evaluated and assessed by the Impact Assessment Agency (IAA) i e MoEF in consultation with a Committee of Experts, the composition of which is specified in Schedule III The assessment is to be completed within a period of ninety days from the receipt of the requisite documents and data from the project authorities and completion of public hearing and decision is to be conveyed within thirty days thereafter The clearance once granted is valid for a period of five years

The project authorities have to submit a half-yearly compliance report to the IAA which makes the reports publicly available Concealment of any factual data or submission of false, misleading data / reports would lead to the project being rejected If approval has been granted on the basis of false data, it is also to be revoked

Therefore, as per the notification, any person who desires to undertake any new project in any part of India or the expansion or modernisation of any existing industry or project listed in Schedule I has to make an application to the Government of India in the MoEF giving all the details specified in Schedule II The application is to be accompanied by a project report including an EIA report The reports submitted with the application are to be evaluated

and assessed by IAA in consultation with a Committee of Experts. Under the original notification of 1994, the IAA and its Committee of Experts had a discretion to interact with the local people likely to be affected by the project. However, by the subsequent amendment in the year 1997, it has been made obligatory to take into account the minutes of the public hearing before granting clearance. A detailed procedure for public hearing has now been provided in Schedule IV.

In *Centre for Social Justice* v. *Union of India*,[196] the Gujarat High Court held that the notice for public hearing is required to be published in at least two newspapers having wide circulation in the area where the project is going to be set up. The purpose of publication is obvious that the people likely to be affected must be informed about the public hearing at which they can raise their objections or make their suggestions. The whole purpose of the public inquiry is to ensure that local residents who are likely to be affected, especially on the environmental front, on account of the industry coming up in the area should be made to understand the environmental consequences of the project so as to enable them to decide whether they should lodge any objections or make any suggestions. All the residents may welcome the industry and at the same time may like to make suggestions for preventing any environmental degradation.

The Court further observed that at least the officer of the SPCB, the officer from the State Department of Environment & Forests and at least one senior citizen nominated by the Collector will have to remain present in order to prevent the public hearing from being rendered invalid.

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196. AIR 2001 Gujarat 71. *See also A.P. Aggrawal* v. *Government of NCT of Delhi*, AIR 2000 SC 205.

Regarding the question as to whether the notification has any retrospective effect, the apex Court answered the question in negative and in *Narmada Bachao Andolan* v. *Union of India*,[197] held:

> The notification under Section 3 of the EPA can not be regarded as having any retrospective effect.... This notification is clearly prospective and inter-alia prohibits the undertaking of a new project listed in Schedule I without prior environmental clearance of the Central Government in accordance with the procedure now specified. In the present case clearance was given by the Central Government in 1987 and at that time no procedure was prescribed by any statute, rule or regulation. The procedure now provided in 1994 for getting prior clearance can not apply retrospectively to the project whose construction commenced nearly eight years prior thereto.

Thus, the undisputed need for prior assessment of the environmental impact before any project is cleared has now been fulfilled by the EIA notification, as amended from time to time. The notification has contributed significantly in the administrative decision-making process. For example, during the session 2002-2003, a total number of 292 projects were appraised for environmental and site clearance. Out of these, 158 projects were cleared and 87 were either rejected or closed.[198] However, since this watch dog function requires lot of manpower and facilities to assess each project, there is a need to further strengthen different agencies involved in the process so that EIA can become a real strong weapon in maintaining the balance between development and environment.

4.5 Conclusion

With the rapid growth of industrialisation, urbanisation and 'throw-away' culture of the present day society, the problems associated with hazardous substances have assumed gigantic proportions. The production of these

197. AIR 2000 SC 3751, 3805.
198. *supra* note 42, at 11.

substances is considered necessary in view of economic development and well being of the people. However, their excess use results in the generation of hazardous waste and release of hazardous chemicals. These substances have toxic, flammable and explosive properties. Thus, they are dangerous to living beings and the environment. Sometimes, a waste or chemical may not be hazardous by itself but may become so after coming into contact with a hazardous chemical or a hazardous waste. Successive industrial disasters in Bhopal, Delhi etc, polluted air and water, contaminated soil, congested roads due to garbage and residues from construction processes, noise and odours and spreading of epidemics have highlighted the need of proper regulation, management and handling of hazardous substances in India. The ill effects of industrialisation and urbanisation have become apparent. They warrant necessary actions / steps in this direction. The specific legal regime in India concerning such substances appears to be comprehensive. The rules made and notifications issued under the enabling provisions of EPA touch the specific problems associated with hazardous waste, bio-medical waste, municipal solid waste and hazardous chemicals. The judicial activism has also contributed a lot in this regard. India has indeed responded positively to the international opinion as filtered through various conventions and agreements. However, the major cause of concern is the ineffective implementation of these laws by the enforcement agencies who because of indifference and prevailing corruption have failed to evolve an effective system of monitoring and surveillance.

The next chapter deals with the statutory control of hazardous substances in India through special central enactments.

Chapter – 5

Special Central Legislations Re: Hazardous Substances

Besides specific rules, the statutory control of hazardous substances through special central enactments is also an important feature of Indian legal system. These laws comprehensively address environmental pollution in general and the handling, management and control of hazardous substances in particular. This chapter details the salient features of the existing environmental laws in India. The discussion aims at ascertaining how far the provisions contained therein are capable of creating and preserving an environment conducive to healthy living. The judicial attitude has also been examined with the help of some important cases. The special central legislations in India are:

- The Insecticides Act, 1968
- The Water (Prevention and Control of Pollution) Act, 1974
- The Water (Prevention and Control of Pollution) Cess Act, 1977
- The Air (Prevention and Control of Pollution) Act,1981
- The Environment (Protection) Act, 1986
- The National Environmental Appellate Authority Act, 1997

Besides the above stated central enactments, the problem of noise pollution has also been specifically dealt with since excessive levels of noise constitute a heath hazard.

5.1 The Insecticides Act, 1968

The Insecticides Act, 1968[1] (hereinafter called 'the Act') was enacted in response to deaths in Kerala and Madras in 1958 that were caused as a result of

1. Act 46 of 1968. As amended by Acts 46 of 1972, 24 of 1977 and 23 of 2000.

food poisoning due to the use of 'Parathion' (Falidol). It came into force with effect from 1st August, 1971. The Act regulates import, manufacture, sale, transport, distribution and use of insecticides to prevent risk to human beings or animals.

Under the Act, a Central Insecticides Board has been constituted by the Central Government consisting of twenty members under the Chairmanship of the Director-General of Health Services. It advises the Central and State Governments on technical matters.[2] Besides, the Central Government has to constitute a Registration Committee with a Chairman and not more than five persons who should be members of the Board as well. The Registration Committee has to register insecticides after scrutinising the formulae and verifying claims made by the importer or the manufacturer about the safety and efficacy of pesticides and insecticides.[3] While the Registration Committee constituted by the Central Government is mainly entrusted with the task of registering insecticides, the Central Insecticides Board has advisory functions to perform. Besides the Board has power to appoint other committees also to exercise powers and perform duties under the Act.[4] The Secretary of the Board also functions as Secretary to the Registration Committee.[5]

Any person desiring to import or manufacture any insecticide has to apply for registration in the prescribed form to the Registration Committee. The Committee, after satisfying itself as to the safety and efficacy of the insecticide, may register it and allot a registration number. However, if the Committee is of

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2. *See* Section 4.
3. Section 5.
4. Section 6.
5. Section 8.

the opinion that the precautions claimed by the applicant are not sufficient and the substance involves serious risk to human beings or animals, it may refuse registration. The Committee has power to vary the conditions of registration or register the insecticide only provisionally for a period of two years.[6] Any person aggrieved by the decision of the Registration Committee may, within a period of thirty days, appeal to the Central Government whose decision shall be final.[7]

As per the Insecticides Act, the Registration Committee registers insecticides after scrutinising the formulae and verifying claims made by the importer or manufacturer about the safety to human beings and animals. In practice, it is the Central Insecticides Board which advises the Central Government and the State Government on technical matters. There is a provision for two types of registrations - primary and secondary. When a pesticide is registered in India for the first time it gets the primary registration. Secondary registration requires subsequent applications. The essential difference is that primary registration requires the Registration Committee to make an enquiry into fitness of the insecticide and satisfy itself with respect to the efficacy and the safety of human beings and animals. This implies that secondary registration does not require the satisfaction of the Committee with respect to the above mentioned criterion. This means that the laboratory tests are merely an entrance procedure and there is no periodic re-assessment in the light of accumulated scientific knowledge. Testing facilities can include any government laboratory or government approved commercial laboratory. This one time procedure can be easily manipulated and the companies prefer government approved commercial

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6. Section 9.
7. Section 10.

labs as they can generate the desired results through dubious ways. Therefore, the safety precautions can be easily contravened due to lacunae in the legislation itself.[8]

The State Government has power to appoint licensing officers to grant a licence to any person for manufacturing, selling, stocking or distributing any insecticide within the area of their jurisdiction.[9] However, the licence so granted may be revoked or suspended if it is obtained by misrepresentation as to any essential fact or if the holder fails to comply with the conditions of licence.[10] Any person aggrieved by the decision of the licensing officer may appeal to the appellate authority whose decision shall be final.[11]

The Central Government has power to establish a Central Insecticides Laboratory under the control of a Director.[12] It prohibits the manufacture, sale, distribution, import or use of any misbranded insecticide, insecticide involving risk to human beings or animals, unregistered insecticide and any insecticide which is in contravention to the provisions of the Act or rules made thereunder.[13]

The Central or State Government may also appoint Insecticide Analysts[14] and Insecticide Inspectors[15] having required qualifications and not having any financial interest in the manufacture, import or sale of any insecticide. The Insecticide Inspectors have power to enter and search any premises, make

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8. Aju Geevarghese John & Abu Mathen George, *Towards Chemical Death: The Issue of Persistent Organic Pollutants, and Endosulfan Pollution in Kerala*, 3 Indian Journal of Environmental Law, 109, 113-114 (June 2002).
9. Sections 12, 13.
10. Section 14.
11. Section 15.
12. Section 16.
13. Sections 17, 18.
14. Section 19.
15. Section 20.

examination and inquiry, stop the distribution, sale or use of an insecticide, take samples of any insecticide and get it analysed and to seize any record, register or document subject to the prescribed procedure.[16]

The provision relating to punishment of the offender has been amended in the year 2000 so as to provide for a more stringent punishment.[17] Whoever imports, manufactures, sells, stocks or exhibits for sale or distributes any misbranded insecticide; or imports or manufactures any insecticide without registration; or contravenes Section 27; or obstructs an Insecticide Inspector in the performance of his duties, is punishable --

(i) for the first offence, with imprisonment for a term which may extend to two years, or with fine which shall not be less than ten thousand rupees but which may extend to fifty thousand rupees, or with both;

(ii) for the second and a subsequent offence, with imprisonment for a term which may extend to three years, or with fine which shall not be less than fifteen thousand rupees but which may extend to seventy five thousand rupees, or with both.

Whoever uses an insecticide in contravention of the provisions of the Act or rules made thereunder, is punishable with fine which shall not be less than five hundred rupees but which may extend to five thousand rupees, or imprisonment for a term which may extend to six months, or with both.

Whoever contravenes any other provision of the Act or rules made thereunder or any condition of a certificate of registration or licence granted thereunder, is punishable -

16. Sections 21, 22.
17. Section 29.

(i) for the first offence, with imprisonment for a term which may extend to one year, or with fine which shall not be less than five thousand rupees but which may extend to twenty five thousand rupees, or with both,

(ii) for the second or a subsequent offence, with imprisonment for a term which may extend to two years or with fine which shall not be less than ten thousand rupees but which may extend to fifty thousand rupees, or with both

The penal provisions apply to companies also with the usual exemption in favour of a person proving lack of knowledge or exercising all due diligence to prevent the commission of the offence [18] However, no prosecution for an offence under the Act can be instituted except with the written consent of the State Government or a person authorised by it in this behalf

A Metropolitan Magistrate or a Judicial Magistrate of the first class is competent to try the case under the Act.[19] However, it has been observed that trials in the ordinary courts take a long time and conviction for misbranded insecticides is not possible without trial In the meantime, manufacturers or dealers continue to manufacture or trade in misbranded insecticides In view of this observation, the State Governments have been empowered to notify Special Courts in any district or metropolitan area for the speedy trial of offences under the Act. This can be done by notification in the Official Gazette and after consultation with the High Court.[20]

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18 Section 33.
19. Section 31.
20. Section 31A (inserted by the Amendment Act of 2000).

The Central Government has been empowered to make rules for the purpose of giving effect to the provisions of the Act.[21] The State Government may also make rules provided they are not inconsistent with the rules made by the Central Government.[22]

A bare reading of the provisions of the Act clearly establishes that a person who sells, exhibits or distributes any insecticide without obtaining a licence is contravening the provisions of the Act.[23]

However, in *Dr. Ashok* v. *Union of India*,[24] the apex Court pointed out that once a substance is specified in the Schedule of the Act, there is no power for canceling the registration certificate issued in respect of the same substance even if on scientific study it appears that the substance in question is grossly detrimental to the human health. This is a lacuna in the legislation itself, and therefore, steps should be taken for appropriate amendment to the legislation.

In view of the observation of the Supreme Court, the lacuna has now been removed by making suitable amendment in the year 2000. In this case, a letter by Dr. Ashok addressed to the Chief Justice of India indicated that several insecticides and listed chemicals are in widespread use in India which have already been banned in several developed countries when found carcinogenic. A prayer was made in the letter for banning the import, production, distribution, sale and use of listed chemicals and insecticides. The Court, while treating the letter as a writ petition, held:

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21. Section 36. *See* Insecticides Rules, 1971.
22. Section 37.
23. *M/s Jayalakshmi Enterprises* v. *Government of A.P.*, 1987 Cr.L.J. 880.
24. (1997) 5 SCC 10.

> It is a fact that pesticides considered hazardous in rich countries remain in use in the developing countries. Many of the developing countries lack scientific facilities for toxicological scrutiny as also for making proper cost assessment. It is true that different countries may have different requirements but it is difficult and dangerous to assume that pesticides banned or restricted in USA or other European countries will be acceptable in the Third World Countries. In India, pesticides have been used over the past four decades for crop protection and control of diseases like malaria. There has been much debate over the use of pesticides at the cost of environment and public health. One will have to weigh the benefits of the use of pesticides and the adverse effect that is produced on human health on account of such use of pesticides.[25]

The Court further observed that though sufficient steps have been taken in India to either ban or to allow restrictive use of the insecticides but there is no coordinated effort among the different ministries of the Government of India which are involved. There has been no continuous effort to have research conducted or to have minimum information about the adverse effects of the use of such pesticides and other chemicals as a result of which people at large of this country suffer to a great extent. As it is on account of lack of capacity of the people of the country to afford good and nutritious food, the average standard of human health is much below the level prevailing in developed countries. If insecticides and chemicals are permitted to be freely used in protecting foodgrains and in enhancing agricultural production grave hazards may arise. To check these maladies the Government of India needs to make coordinated and sustained efforts. In this age of computerisation and interlinking of the countries through Internet, gathering necessary information in respect of any particular insecticide or pesticide and the manner in which such commodities have been dealt with in other advanced countries is easy. There is need of a genuine will on the part of the administrative machinery and

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25. *Id.* at 19.

a conjoint effort of all the ministries concerned. The Court, in fact, directed the Cabinet Secretary to constitute a Committee of four senior officers from four different ministries involved to take suitable measures in future in respect of any other insecticides and chemicals which are found to be hazardous for health.

Therefore, in conclusion it may be said that looking at the disastrous consequences and alarming incidents of cancer deaths, mental retardation, infertility, thyroid deficiency and physical deformity etc. the provision for more stringent punishment in case of violation of the provisions of Insecticides Act is a step in the right direction. The Government ought to adopt even more stringent measures to check the growth of unlicensed insecticide industries in the country. Farmers may also be educated regarding the consequences of using spurious insecticides and the significance of factors like weather and timing of spray to ensure judicious use. Today, farmers in India do not take up even basic precautionary measures due to lack of knowledge.

There is a need to amend the Insecticides Act. It should be amended to provide for mandatory hiring of an agricultural scientist by every pesticide dealer in the country. The scientist can suggest the farmers about the type and quantity of pesticides to be used for a particular crop. This is in line with buying drugs from a pharmacist on doctor's prescription. Since majority of the farmers can not read English to understand the applications of the pesticides, they have to be told about it. The move will not only bring the farmers closer to agricultural scientists but will also bridge the gap between laboratory findings and their practical use.[26]

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26. *Centre Contemplating Changes to Pesticide Act*, Deccan Herald (Bangalore) dated 29-10-2002: CSE-India Green File, October 2002, No. 178, at 108-9.

As our understanding of the impacts of insecticides deepens, there is a growth in the demand of 'safer' materials. The challenge of industry is to provide new compounds that satisfy environmental concerns as well as provide cost-effective insect control. However, each state has its own norms governing the pesticide sector regardless of the provisions of Insecticides Act and the rules made thereunder. Moreover, the registration procedure under the existing legislation can be easily manipulated.

Besides the requirement of registration of insecticides by the Central Insecticides Board and Registration Committee, the industry has to obtain separate permission from state agricultural department for selling them in the respective states. This causes delay in the use of new insecticides. On the other hand, necessary action is not taken against the culprits for selling spurious insecticides. The Act should be suitably amended to ensure that the sale of spurious insecticides and pesticides is controlled and speedy registration of genuine ones is facilitated. 'Inspector Raj' should be curbed since Inspectors have enormous powers under the Act over introduction of new insecticides in the market.

5.2 The Water (Prevention and Control of Pollution) Act, 1974

Water is the oldest heritage of human race. It is the basic ingredient to sustain life on this planet. The living cell is mostly water. Blood and sap are about 90 percent water. An adult's body is about 65 percent water. A loss of 15 percent of this liquid usually proves fatal through dehydration. Humans beings require 2 to 3 litres of water a day just to maintain the crucial liquid balance within the body. More than 4 litres may be required when the person is active. Our food

intake also contains water. Tomatoes contain 90 percent water, potatoes 80 percent and meat about 60 percent. It is estimated that an average person eats about 50 tons of food and drinks about 40,000 litres of water in a lifetime. This is subject to variations from country to country.[27]

Water is formed by combining two molecules of Hydrogen with one molecule of Oxygen in the presence of heat energy. The total amount of water on the earth is about 1.35 billion cubic kilometres ($3.5x10^{20}$ gallons). Over 97 percent of this quantity is in the oceans as salt water. The earth's fresh water amounts to only 37 million cu km. of which 80 percent occurs in polar ice caps and glaciers. The water we use comes from 50 cu. km. per day run-off in the rivers, streams and lakes and 70 cu. km. per day flow through underground reservoirs. This supply has been constant over tens of thousands of years. Only the demand has shown a steep increase over the last century.[28] Due to this increase, in India the average annual availability of water per capita has declined from 5,236 cubic metres in 1951 to only 2,227 cubic metres in 1991. As per estimates, this will further decline to only 1,555 cubic metres by the year 2013.[29] The population of India, which is now one billion, is expected to reach a figure between 1.5 billion and 1.8 billion in the year 2050. There shall then be a requirement of 2788 billion cubic metre of water annually in India to be above water stress zone and 1650 billion cubic metre to avoid being water scarce country.[30]

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27. ENVIRONMENTAL PROBLEMS, PROTECTION AND CONTROL, 2 INSTITUTE FOR SUSTAINABLE DEVELOPMENT, 115 (1st ed. 1999).
28. *Id.* at 115-116.
29. J. Mohan Rao, *Whither India's Environment?*, Economic and Political Weekly, 679 (April 1, 1995).
30. *Narmada Bachao Andolan* v. *Union of India*, AIR 2000 SC 3751, 3786.

Apart from availability itself, over exploitation of ground water and pollution of surface sources such as rivers, lakes, ponds and open wells are the key problems. About 80 percent of the population of India does not have access to safe drinking water. 70 percent of surface water is seriously polluted[31] primarily because industrial effluents and domestic sewage remain largely untreated before being discharged into water courses.

Water is colourless and transparent substance. The polluted water means such water which contains foreign substances in it, which alters physical, chemical or biological properties of water rendering it unfit for use. Water pollution is caused due to the dumping into water courses of various hazardous chemicals, trade effluents and other toxic material beyond the assimilative capacity of water bodies. Polluted water is the leading cause of serious diseases in human beings like cholera, jaundice, typhoid, dysentery, hookworm, tapeworm and guineaworm. Polluted water is injurious for domestic, commercial, industrial, agricultural or other legitimate uses and also to the health of animals and aquatic life.

Many factors cause water pollution. The major factor is community wastes. City sewage is the major source of water pollution. Industry contributes to 6 to 10 percent of total wastes. The remaining 90 to 94 percent wastes are domestic sewage flowing primarily from major cities and towns.[32] The pollution of water by community wastes is growing due to urbanisation and population explosion.

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31. *National Convention On Land-Water Use and Wastelands Development in India*, Yashvantrao Chavan Pratishthan, Bombay, YCP (1993).
32. *Annual Report of the Ministry of Environment and Forests*, 10 (1979-80).

In most of the cities and towns the sewage system is not able to cope with the increase in the flow and volume of community wastes.

Regarding world wide urbanisation, it is estimated that by the year 2025,the number of cities with populations exceeding one million inhabitants will be 639 while those with populations exceeding four million will be 135 as against the present numbers of 222 and 35 respectively. By 1987, some 43 percent of the world's people were living in cities. This number is expected to double by 2015.[33]

Over a third of India's urban population lives in slums. About three quarters of urban households are without adequate sanitation. Only 15 percent of them have private toilets and 60 percent resort to open defecation. Less than half of waste water is collected of which less than half is treated. Garbage collection varies between 20 percent and 96 percent. Water and sanitation related diseases such as cholera, dysentery and gastroenteritis accounted for about 60 percent of all urban deaths.[34] About 4 million children die every year due to water borne diseases.

However, domestic wastes are less toxic than industrial wastes. The Supreme Court in *Kanpur tanneries case*[35] observed that "it should be remembered that the effluent discharged from a tannery is ten times more noxious when compared with the domestic sewage water which flows into the river from any urban area on its banks". Industries discharge poisonous, noxious and harmful

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33. *supra* note 27, at 125.
34. SIVARAMAKRISHNAN, K.C., MANAGING URBAN ENVIRONMENT IN INDIA: TOWARDS AN AGENDA FOR ACTION (The Times Research Foundation, Calcutta, 1993).
35. *M.C. Mehta* v. *Union of India,* (1996) 4SCC 351.

substances in streams and wells. Industrial effluents are carried away through the pipes which often leak and overflow. Use of insecticides, pesticides and chemical fertilizers also contribute to water pollution. It is estimated that about 60,000 synthetic chemicals are in daily use and their number increases by 1000 to 1,500 every year.[36] Industrial effluents and chemicals, because of their toxic properties, contaminate the water to such an extent that treatment of water becomes very difficult.

Another major source of water pollution is the reckless storage of different kinds of materials on land. Things like garbage, pesticides and industrial and human wastes etc. are stored or left on the open land. With rains, this finds its way into sewerage system and nallahs. These things on the open land also contaminate the ground water through leaching and seepage.

Air borne pollutants are another source of water pollution. They fly from distant places and fall down in the lakes and other water reservoirs. Smoke from chimneys of factories finally settle down on the surface water. In developing countries, protected water supply and sanitation facilities are inadequate. According to estimates, sanitation facilities are not available to 47 percent of the urban population and 86 percent of the rural population. Of the 3,119 towns and cities in India, only 209 have partial and just 8 have full sewage treatment facility.[37]

Thermal power plants and industrial processes produce large amounts of waste heat which is released into waterways causing thermal pollution. This heat has

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36. *supra* note 27, at 123.
37. *Id.* at 126.

several physical effects on water. It reduces the solubility of oxygen which can adversely affect fish and other marine organism. Elevated temperatures and sudden changes in temperature even by a few degree Celsius have been found to be lethal to fish.[38]

With the industrialisation and increase in population, the ecological balance has been severely disturbed. In our country, where the population is without an adequate and safe water supply, water pollution has to be considered in terms of health more than any thing else. Rising population, rapid industrialisation and the general tendency of our people to consider our rivers and streams to have an infinite capacity to absorb all kinds of impurities, demand urgent action - scientific and legal, to prevent and control water pollution.

In India, the problem of water pollution was officially recognised in early sixties. A committee was set up in 1962 by the Ministry of Health to draft a legislation for the prevention of water pollution. The report of the Committee was circulated to the State Governments and was also considered by the Central Council of Local Self Government in September, 1963. The Council resolved that a single law regarding measures to deal with water pollution control may be enacted by the Union Parliament. A draft Bill was accordingly prepared and put up for consideration at a joint session of the Central Council of Local Self Government and the Fifth Conference of the State Ministers of Town and Country Planning held in 1965. In pursuance of the decision of the joint session, the draft Bill was considered in detail by a Committee of

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38. *Id.* at 128.

Ministers of Local Self Government from the State of Bihar, Madras, Maharashtra, Rajasthan, Haryana and West Bengal.

After considering the relevant local provisions existing in the country and recommendations of the aforesaid committees, the government came to the conclusion that existing local provisions are neither adequate nor satisfactory. Therefore, an urgent need was felt for introducing a comprehensive legislation which would establish unitary agencies in the Centre and State to provide for the prevention, abatement and control of pollution of rivers and streams, for maintaining or restoring wholesomeness of such water courses and for controlling the existing and new discharges of domestic and industrial wastes.

The Bill sought to establish at the Centre as well as in the States Water Pollution Prevention Boards equipped with technical and administrative staff and to confer on them such powers as are necessary to deal with the problem of water pollution in the country effectively; provide penalties for contravention of the provisions of the Bill; and establish Central and State water testing laboratories to enable the Boards to assess the extent of pollution, lay down standards and establish guilt or default.

In the objects and reasons of the Bill, it was stated that 'the problem of pollution of rivers and streams has assumed considerable importance and urgency in recent years as a result of the growth of industries and the increasing tendency to urbanisation. It is, therefore, essential to ensure that the domestic and industrial effluents are not allowed to be discharged into the water courses without adequate treatment as such discharges would render the water

unsuitable as source of drinking water as well as for supporting fish life and for use in irrigation. Pollution of rivers and streams also causes increasing damage to the country's economy'.

Water is a State subject under the Constitution. However, Article 252 of the Constitution empowers the Union Government to legislate on a State subject provided two or more State legislatures consent to a Central law. The Central Government introduced the 'Water (Prevention and Control of Pollution) Bill, 1969 in the Rajya Sabha after 6 States had passed enabling resolutions authorising the Parliament to enact the law on their behalf. In August, 1970 Rajya Sabha decided to refer the Bill to a joint committee of both the Houses. The joint committee, after detailed examination, presented its report alongwith the modified Bill to the Parliament on November 13, 1972. The Parliament passed the Bill in early 1974. It received assent of the President on March 23, 1974 and became Act No. 6 of 1974. By then, 6 more States had passed enabling resolutions.

The object of the Water (Prevention and Control of Pollution) Act, 1974[39] (hereinafter 'the Water Act' or 'the Act') as set out in the Preamble is :

> An Act to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water, for the establishment, with a view to carrying out the purposes aforesaid, of Boards for the prevention and control of water pollution, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.

The Act came into force at once in the States of Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya

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39. As amended by Acts 44 of 1978 and 53 of 1988.

Pradesh, Tripura and West Bengal (the legislatures of these States passed enabling resolutions) and all Union Territories. Any other State could also adopt this Act under clause (1) of Article 252 of the Constitution and it would come into force in that State from the date of adoption.[40]

The Water Act was amended in 1978 and was revised in 1988 so as to make its provisions more effective. Sections 63 and 64 empower the Central Government and State Governments respectively to makes rules to carry out the purposes of the Act. These rules are to be so made as to avoid inconsistency.

Section 2(e) of the Water Act defines 'pollution' as "such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety; or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms". This definition of water pollution is quite wide and exhaustive.

Water Act authorises the Central Government and State Government to constitute a Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCB) respectively.[41] In relation to a Union Territory, the Central Board exercises powers.[42] Central Board and State Boards are the legal

40. Section 1(3).
41. Sections 3, 4.
42. Section 4(4).

corporate entities[43] and are equipped with sufficient number of staff members.[44] The Board may temporarily associate with itself certain persons to carry out particular purposes[45] and may also appoint any qualified person as consulting engineer to the Board.[46] The terms and conditions of service of the officers, employees, committee members and other persons associated with the Board have been specified.[47] All members, officers and servants of the Board shall be deemed to be public servants within the meaning of Section 21 of the Indian Penal Code, 1860.[48]

The Act also permits the Constitution of Joint Boards so that a concerted effort can be made to carry out the purposes of the Act.[49] A Joint Board should be equipped with sufficient staff members.[50]

5.2.1 *Functions of the Boards*

The Act confers powers and assigns various functions to Central as well as State Pollution Control Boards. The functions CPCB[51] are as follows :

- promote cleanliness of streams and wells in general in different areas of states;
- advice the Central Government on any matter concerning the prevention and control of water pollution;

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43. Sections 3(3), 4(3).
44. Sections 3(2), 4(2)
45. Section 10.
46. Section 12(4).
47. Sections 5-12; *See also* Rules 4,5 & 10 of Water (Prevention and Control of Pollution) Rules, 1975 and Rule 11 of Water Pollution (Procedure for Transaction of Business) Rules, 1975.
48. Section 50.
49. Section 13.
50. Section 14.
51. Section 16.

- coordinate the activities of State Boards, resolve disputes among them and provide technical assistance and guidance to them;
- carry out and sponsor investigations and research relating to problems, prevention, control or abatement of water pollution;
- plan and organise the training of persons engaged or to be engaged;
- organise through mass media a comprehensive programme regarding prevention and control of water pollution;
- perform such functions of any State Board as may be specified in an order made under sub-section (2) of section 18;[52]
- collect, compile and publish data relating to water pollution and prepare manuals, codes or guides relating to treatment and disposal of sewage and trade effluents;
- lay down, modify or annul the standards for a stream or well;
- planning and execution of a nation-wide programme for the prevention, control or abatement of water pollution; and
- establish or recognise a laboratory or laboratories to analyse the samples of water, sewage or trade effluents.

For the prevention, control or abatement of water pollution, the Act assigns following functions to the SPCB:[53]

- to plan a comprehensive programme and secure its execution;

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52. Sub-section (2) of Section 18 reads "where the Central Government is of the opinion that any State Board has defaulted in complying with any directions given by the Central Board under sub-section (1) and as a result of such default a grave emergency has arisen and it is necessary or expedient so to do in the public interest, it may, by order, direct the Central Board to perform any of the functions of the State Board in relation to such area, for such period and for such purposes, as may be specified in the order".
53. Section 17.

- to advise the State Government on water pollution issues; to collect and disseminate information; to encourage, conduct and participate in investigations and research; to collaborate with the Central Board in organising the training of persons engaged or to be engaged in programmes and to organise mass education programmes,
- to inspect sewage or trade effluents, their disposal system and setting up of treatment plants;
- to lay down, modify or annul effluent standards for the sewage and trade effluents,
- to evolve economic and reliable methods of treatment of sewage and trade effluents,
- to evolve methods of utilisation of sewage and suitable trade effluents in agriculture,
- to evolve efficient methods of disposal of sewage and trade effluents on land,
- to lay down standards of treatment of sewage and trade effluents,
- to make, vary or revoke any order regarding discharge of waste, construction of new systems for the disposal of sewage and trade effluents and to lay down, modify or annul effluent standards for the sewage and trade effluents,
- to advise the State Government with respect to the location of any industry which is likely to pollute stream or well,
- to perform such other functions as may be prescribed or entrusted to it by the Central Board or the State Government; and
- to establish or recognise a laboratory or laboratories to analyse the samples of water or any sewage or trade effluent.

5 2 2 *Powers of Boards*

Besides the above mentioned functions, the Act confers wide powers on Central Board and State Boards to be exercised within the area of their jurisdiction for effective implementation of the provisions These powers may be summarised as under

- Power to obtain information [54]
- Power to take samples of effluents [55]
- Power of entry and inspection [56]
- Power to lay down standards [57]
- Power to grant or withhold consent [58]
- Power to review or withdraw consent [59]
- Power to carry out certain works [60]
- Power to take immediate action in case of emergency [61]
- Power to make application to the court for restraining the polluter [62]
- Power to give directions [63]
- Power to make a complaint to the court [64]
- Power to appoint Board analysts [65]
- Power to seek assistance from local authorities [66]

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54 Section 20
55 Section 21
56 Section 23
57 Section 24
58 Sections 25,26
59 Section 27.
60 Section 30
61 Section 32.
62 Section 33
63 Section 33A
64 Section 49
65 Section 53(3)
66 Section 55

- Power to acquire land for public purposes.[67]

The State Board or any officer empowered by it may make surveys of any stream or well and obtain necessary information regarding the position of such stream or well. Directions may be given with respect to abstraction of water from and discharge of sewage or trade effluent into such streams or wells. The Board may also obtain information regarding any disposal system.

A State Board or any officer empowered by it has power to take samples of water or of any sewage or trade effluent for the purpose of analysis The result of analysis of sewage or trade effluent is not admissible in evidence in any legal proceeding unless the prescribed procedure is followed.[68] The procedure is that the person taking the sample of sewage or trade effluent has to serve on the occupier or his agent a notice in the prescribed form of his intention to have it analysed. The sample is divided into two parts in the presence of occupier or his agent. Each part of the sample is placed in a container which is marked, sealed and signed by the person taking the sample as well as the occupier or his agent. One container is sent to the laboratory recognised by the Central Board[69] (in case of Union Territory) or the State Board[70] and on request of the occupier or his agent is sent to the laboratory recognised by the Central Government[71] (in case of Union Territory) or the State Government.[72] If the occupier or his agent does not make a request for division of sample into two parts, the sample is placed in one container which is marked, sealed and signed by

67. Section 56.
68. Section 21(2).
69. Section 16.
70. Section 17.
71. Section 51.
72. Section 52.

the person taking the sample and it is sent for analysis to the laboratory recognised by the Central Board (in case of Union Territory) or the State Board

If the occupier or his agent, after service of notice, wilfully absents himself, the sample is placed in one container which is marked, sealed and signed by the person taking the sample and it is sent to the laboratory recognised by the Central Government (in case of Union Territory) or the State Government, as the case may be In such a situation, the person taking the sample has to inform the government analyst[73] in writing about the willful absence of the occupier or his agent

The sample so collected is analysed by the Board analyst[74] who submits a report in prescribed form in triplicate to the Central Board (in case of Union Territory) or the State Board [75] Likewise, where a sample has been sent for analysis by the Government analyst, the analyst submits his report in triplicate to the Central Board (in case of Union Territory) or the State Board [76] In case of inconsistency between the two reports, the report of the Government analyst prevails [77]

On receipt of the report, the Board sends one copy to the occupier or his agent, second copy is preserved for production before the court in case of legal proceedings and the third copy is kept by the concerned Board [78] The procedure for lifting the sample of water, sewage or trade effluent has been given such an importance that the result of analysis is not admissible in evidence unless the prescribed procedure is followed [79]

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73 Appointed under section 53(1) by the Central Government or Section 53(2) by the State Government, as the case may be

74 Appointed under section 53(3)

75 Section 21(1)

76 Section 22(3)

77 Section 22(4)

78 Section 22(2)

79 *See M/s Delhi Bottling Co Pvt Ltd* v *Central Board for the Prevention and Control Water Pollution*, AIR 1986 Delhi 152

Any person empowered by a State Board has a right to enter and inspect any place for the purpose of performing any of the functions of the Board.

The Act empowers a State Board to prescribe standards for the discharge of effluents into any stream, well or sewer or on land. Discharge of polluting substances into streams, wells or sewers or on land in excess of the standards laid down by the State Board is generally prohibited. However, in actual practice, the State Boards have not laid down their own standards and are following, with minor variations, the standards laid down by the Indian Standards Institute (ISI). ISI has developed standards for industrial effluents, sewage effluents and streams. Making of standards is a difficult matter and requires consultations with experts and affected parties.

In *World Saviors* v. *Union of India*,[80] U.P. Pollution Control Board reported that M/s Doon Valley Distillers were discharging effluent beyond the prescribed pollution control standard and that effluent was being pumped by it to nearby fields belonging to it as well as to farmers for irrigation. The water pollution caused by the discharge of effluents was likely to cause harm to the subsoil water since the same was beyond the tolerance level. In these circumstances, the Supreme Court directed the total closure of the industry and asked the U.P. Pollution Control Board to ensure closure, if necessary, with police force.

Before establishing any industry, operation or process, or any disposal system, which is likely to discharge sewage or trade effluent into a stream, well or

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80. (1998) 9SCC 247.

sewer or on land, a person is required to obtain consent of the State Board Consent is also required in case a person brings into use any new or altered outlet for the discharge of sewage or begins to make any new discharge of sewage The application for consent of the State Board is submitted in the prescribed form accompanied with prescribed fee

Under Section 25(1) of the Water Act, as amended in 1988, the prohibition now extends even to "establishment" of the industry or taking of steps for that process Till the consent of the Board is obtained, neither can the industry be established nor can any steps be taken to establish it [81]

The Board, while granting consent, may impose conditions like specifying the location, construction and use of outlet as well as the composition temperature, volume or rate of new discharge These conditions are binding on the applicant The Board is also empowered to refuse consent but for that reasons are to be recorded in writing

The Board maintains a register containing the particulars of the conditions subject to which the consent is granted This register is open to all the affected interests for inspection and shall be a conclusive proof that consent was granted subject to such conditions If the consent is neither given nor refused, on the expiry of four months from the date of application it is deemed to have been given unconditionally Consent is required to be obtained by those persons also who have been discharging any sewage or trade effluent before the commencement of the Act

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81 *A P Pollution Control Board II* v *Prof M V Nayudu (Retd)* (2001) 2 SCC 62

The Board may, at any time, review the consent order and may vary or revoke any of the conditions imposed under it. Obtaining consent from the State Board is so important that the Supreme Court in *M.C. Mehta (Calcutta Tanneries' Matter)* v. *Union of India*,[82] observed that:

> In terms of Section 26, the Calcutta tanneries are under an obligation to obtain consent from the Board before they are permitted to discharge the trade effluent into a stream or on land. According to the affidavits field by the Board very large number of Calcutta tanneries have not obtained the consent required under the Water Act. Such tanneries are liable to be prosecuted under the Water Act.

If the consent has been granted subject to certain conditions but the person concerned did not execute the work as per the conditions imposed and within the specified time, the State Board may serve on the person concerned a notice requiring him to execute the work accordingly within the specified time (not being less than thirty days). If he still fails, the State Board may itself execute the work and recover the cost of execution from him as arrears of land revenue, or of public demand.

If it appears to the State Board that any poisonous, noxious or polluting matter is present or is being discharged into any stream or well or on land and as a result of which an emergency has arisen, the Board may, for reasons to be recorded in writing, carry out any works of a temporary character, as it may consider necessary for the purpose of removing, remedying or mitigating such pollution. It may also issue orders restraining or prohibiting the person concerned from discharging such substances.

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82. (1997) 2SCC 411.

The normal policy of the Board is to persuade the person causing water pollution to carry out pollution control measures as stipulated in the consent order. If persuasion fails, the Board is empowered to use the alternative of making an application to a Court of Metropolitan Magistrate or a Judicial Magistrate of the first class, for restraining the person from causing such pollution. On receipt of application by the Board, the court may make any such order as it deems fit.

The direction or order of the court may require the person causing pollution to desist from causing such pollution or to remove the polluting matter from such stream or well. If the person fails, the court may authorise the Board to remove or dispose of such polluting matter. All expenses incurred by the Board in carrying out the order of the court are recoverable from the person concerned as arrears of land revenue or of public demand.

The proceedings under Section 33 of the Act are intended to check the public nuisance of water pollution and these provisions are akin and analogous to Section 133, Cr.P.C. and are maintainable in the Court of a Metropolitan Magistrate or a Judicial Magistrate of the first class. The Section intends to arrest the damage and repair it and to take preventive measures to check the pollution of our water resources. The non-compliance of the injunction issued under Section 33 entails criminal prosecution and conviction.[83]

The Board or any of its authorised officer has power to lodge a complaint to the court and only then the court shall take cognizance of any offence under the

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83. *Maharaja Shri Umaid Mills Ltd., Pali* v. *State of Rajasthan*, AIR 1998 Rajasthan 9.

Act. After the Amendment Act of 1988, cognizance may also be taken by the court on a complaint made by a person who has given notice of not less than sixty days of his intention to make a complaint to the Board.

The Board is empowered to issue directions in writing to any person, officer or authority including directions to close, prohibit or regulate any industry, operation or process or to stop or regulate the supply of electricity, water or any other service. This power has been given to the Board by the Amendment Act of 1988

In *Re: Havana River - Sati Sugars Ltd.*[84], in exercise of the powers conferred under Section 33A of the Water Act, Tamil Nadu Pollution Control Board issued certain directions to the respondent company including direction to ensure proper storage of effluent in lagoons and treatment and disposal of treated effluent. The industry was discharging effluents into river Havana thereby polluting the river water. Despite enough time given to the industry for remedial steps, the directions were found not to have been complied with A show cause notice was issued by the Board to the industry calling upon it to state why penal action for offences punishable under Section 44 read with Section 45(a) of the Act should not be initiated for violating the conditions imposed by the Board. The Court held ·

> This is a serious matter and shows that pollution is continuing because of actions of the industry and remedial steps have not been taken to prevent pollution and contamination of the river water... which has become a health hazard and environmental enemy. Enough time has been given to the industry to take remedial steps. It has failed to do so. We are, therefore, left with no other option but to direct the closure of the operation of the industry... The Tamil Nadu Pollution Control Board shall submit

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84 (1998) 2 SCC 601.

> a report regarding compliance of this direction by the industry within ten days.

The industry was, however, allowed to approach the Court for appropriate orders regarding restarting the operations after pollution control devices have been fixed and proper steps taken to control pollution.

When the conduct of the industry was far from bona fide and being one of continuing to flout orders passed by the Court and violating its own undertakings filed before the Court, the industry continued to run without any enabling power or order in its favour polluting the environment by discharging contaminated water, the Court declined to interfere with the order of the Board under Section 33A for the closure of the industry.[85]

For the purpose of discharging any of its functions, the Board may require all the local authorities to render such help and assistance and furnish such information as may be necessary. In *D.K. Joshi* v. *Chief Secretary, State of U.P.*[86], in 1992, a PIL was filed complaining that despite existence of legislation conferring powers and duties on various agencies, no action was taken in respect of the drinking water of Agra city which was unfit for human consumption.

The Supreme Court issued notices to different agencies like Nagar Mahapalika, State of U.P., U.P. Pollution Control Board and National Environmental Engineering Research Institute (NEERI) was also called upon to submit a report. Report was submitted by NEERI indicating long-term measures which

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85. *M/s Stella Silks Ltd.* v. *State of Karnataka,* AIR 2001 Karnataka 219.
86. (1999) 9 SCC 578: AIR 2000 SC 384. For directions of the Court to Kanpur Municipality restraining it from letting out trade effluents and wastes into the river Ganga, *see M.C. Mehta* v. *Union of India,* AIR 1988 SC 1115.

can be taken in relation to supply of drinking water as well as sewerage and drainage system and disposal of solid waste in the city of Agra The Court held

> Although the State Government has taken some definite steps in all the three aspects, namely supply of drinking water, providing adequate sewerage and drainage system and providing measures for disposal of solid waste in the city of Agra but by no stretch of imagination, can it be said that the measures taken by the State Government are adequate in relation to the necessity of the city.

The Court directed the State to appoint a Monitoring Committee to be headed by the Commissioner of Agra which can look into the effective functioning of the several public authorities, who are responsible for the supply of drinking water, providing sewerage and providing adequate measures for disposal of solid waste The Committee was directed to be set up within three months from the date of order in order to implement the reports submitted by NEERI expeditiously The State Board was allowed to acquire land under the provisions of Land Acquisition Act, 1894 or under any other law for the effective performance of its functions

The Central Board as well as the State Board have their own funds Besides this the Central Government and the State Government are under a duty to make contribution to their respective Boards in each financial year Money can also be borrowed by way of loans, issue of bonds, debentures or any other instrument with the consent of Central Government or the State Government, as the case may be. Accounts are audited by an appointed auditor and audit report is to be laid before both the Houses of Parliament or as the case may be, the State Legislature.[87]

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87. Sections 34-40.

5.2.3 *Powers of the Central and State Governments*

Besides assigning different functions and conferring various powers on Central and State Pollution Control Boards, the Act also confers powers on Central and State Governments to ensure effective implementation of its provisions. The powers of Central Government and State Government may be summarised as under:

Exclusive Powers of Central Government

- Power to constitute a Central Pollution Control Board.[88]
- Power to establish a Central Water Laboratory.[89]
- Power to appoint Government analysts.[90]
- Power to supersede the Central Board and Joint Boards.[91]
- Power to make rules.[92]

Exclusive Powers of State Government

- Power to constitute a State Pollution Control Board.[93]
- Power to restrict the application of the Act to only certain areas.[94]
- Power to issue notification regarding prohibition on use of stream or well for disposal of polluting matter etc.[95].
- Power to issue notification regarding the date of application for consent of the State Board in case of discharge of sewage or trade effluent prior to the commencement of Water Act.[96]

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88. Section 3.
89. Section 51.
90. Section 53(1).
91. Section 61.
92. Section 63. *See* The Water (Prevention and Control of Pollution) Rules, 1975 vide G.S.R. 58 (E), dated 27th Feb. 1975; Water Pollution (Procedure for Transaction of Business) Rules, 1975 vide G.S.R. 3 (E), dated 10th January, 1975.
93. Section 4.
94. Section 19.
95. Section 24(3).
96. Section 26.

- Power to constitute Appellate Authority [97]
- Power to revise the order of the Board [98]
- Power to determine the rate of interest of the expenses incurred by the State Board which are to be recovered from the defaulter [99]
- Power to establish a State Water Laboratory [100]
- Power to appoint Government analysts [101]
- Power to supersede State Board [102]
- Power to make rules [103]

Concurrent Powers of Central Government and State Government

- Power to remove any member of the Board [104]
- Power to receive resignation of the Chairman of the Board [105]
- Power to form an opinion as to the disqualification of a member in cases involving moral turpitude or abuse of position and order removal of the member [106]
- Power to make rules for the appointment of officers and employees of the Board [107]

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97. Section 28 In the matter of pollution control, all the affected persons can file an appeal under Section 28, *see Gujarat Pollution Control Board* v *Parmar Devusinh Shersinh*, AIR 2001 Gujarat 11.
98 Section 29
99 Section 30(3)
100 Section 52
101 Section 53(2)
102 Section 62. *See R A Goel* v *Union of India*, AIR 2000 Punjab & Haryana 320
103 Section 64 *See* Andhra Pradesh Water (Prevention and Control of Pollution) Rules, 1976, Andhra Pradesh State Board for the Prevention and Control of Water Pollution (Procedure for Transaction of Business) Rules, 1976; Kerala Water (Prevention and Control of Pollution) Rules, 1976; Kerala Water (Prevention and Control of Pollution) Appellate Authority Rules, 1977; Maharashtra Water (Prevention and Control of Pollution) Rules, 1983; Manipur Water (Prevention and Control of Pollution) Rules, 1991, Uttar Pradesh Water (Consent for Discharge of Sewage and Trade Effluents) Rules, 1981
104 Section 5(3)
105 Section 5(4)(a)
106 Section 6(1) sub-clause (c) and (g) & Section 6(2).
107. Section 12(3)

- Power to approve their terms and conditions of service.[108]
- Power to constitute Joint Boards.[109]
- Power to give directions to the Joint Board.[110]
- Power to give directions to the Boards.[111]
- Power to authorise the Board to borrow money from any source.[112]
- Power to receive copies of the budget and annual report of the Board.[113]
- Power to prescribe a form for the maintenance of proper accounts and records.[114]
- Power to appoint an auditor to audit the accounts of the Board and to receive audited copy of these accounts.[115]
- Power to receive returns, reports, statistics, accounts and other information regarding Board's activities.[116]
- Protection against legal proceedings for actions taken in good faith.[117]

5.2.4 *Penalties under the Act*

The Act provides for stiff penalties for violations of Sections 24, 25 and 26. The violation is punishable with imprisonment for term which shall not be less than one year and six months but which may extend to six years and with fine.[118] If the non compliance is repeated again after conviction, the minimum

108. Section 12(3A).
109. Section 13.
110. Section 15.
111. Section 18.
112. Section 37A.
113. Sections 38, 39.
114. Section 40(1).
115. Section 40(3-7).
116. Section 57.
117. Section 59.
118. Sections 43, 44.

punishment of two years imprisonment which can be extended upto seven years and with fine has been provided.[119]

A failure to comply with the court order under Section 33 or a direction from the Board under Sections 32 and 33A is punished with imprisonment for a term which shall not be less than one year and six months but which may extend to six years and with fine and in case the failure continues with an additional fine which may extend to five thousand rupees for every day during which such failure continues. If the failure continues beyond a period of one year after the date of conviction, the offender is punished with imprisonment for a term which shall not be less than two years but which may extend to seven years and with fine.[120]

If anyone obstructs the functioning of the Board or fails to furnish information as required or wilfully makes a statement which is false, he is punished with imprisonment which may extend to three months or with fine which may extend to ten thousand rupees or with both.[121] Same punishment has been provided in case of a person who contravenes any of the provisions of the Act for which no penalty has been elsewhere provided in the Act. In case the contravention continues, an additional fine which may extend to five thousand rupees for every day may be imposed.[122] The court is empowered to publish the name and address of the offender at his cost if he is convicted a second time for the same offence.[123]

5.2.5 *Offences by Companies and Government Departments*

If the offence has been committed under the Act by a company, every person who, at the time of commission of offence, is incharge of and is responsible for

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119. Section 45.
120. Section 41.
121. Section 42.
122. Section 45A.
123. Section 46.

the conduct of the business of the company, is deemed to be guilty of the offence.[124] Similarly, if the offence is committed by any Department of Government, the Head of the Department is deemed to be guilty.[125] However, if the offence has been committed without their knowledge or if they exercised all due diligence to prevent the commission of offence, there might be no liability.

If the offence is committed by a company and it is proved that it has been committed with the consent or connivance, or is attributable to the neglect of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer is also deemed to be guilty of that offence.[126]

In *U.P. Pollution Control Board* v. *Mohan Makings Ltd.*,[127] in 1983, U.P. Pollution Control Board initiated proceedings against M/s Mohan Makings Ltd, a liquor manufacturing company under Sections 47, 24 and 43 of the Water Act on the ground that it was continuously discharging pollutants into River Gomuti in Lucknow and thereby raising pollution level beyond permissible limits. It was alleged that directors and managers of the company were responsible for the contamination of the river water.

The trial Court issued process at the first instance. The Sessions Court, however, quashed the trial Court's order on the ground that it was not a speaking order. The CJM then passed a detailed order again issuing process to

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124. Section 47(1).
125. Section 48.
126. Section 47(2).
127. (2000) 3 SCC 745.

the accused. In revision, the Sessions Court quashed this order also, holding that no specific role had been assigned in the complaint to the directors and managers in the discharge of the pollutant effluents.

The Board then filed a revision petition before the High Court. The High Court took fifteen long years in confirming the order of the Sessions Court and holding that the directors had not been shown to have been incharge of or responsible to the company for the conduct of its business. Feeling aggrieved, the Board approached the Supreme Court by preferring an appeal. The Supreme Court, while setting aside the judgment of the High Court as well as the order of the Sessions Court, held.

> Courts cannot afford to lightly deal with cases involving pollution of air and water. The message must go to all concerned. The Courts will share the parliamentary concern on the escalating pollution level of our environment. Those who discharge noxious polluting effluents into streams may be unconcerned about the enormity of the injury which it inflicts on the public health at large, the irreparable impairment it causes on the aquatic organisms, the deleteriousness it imposes on the life and health of animals. So the courts should not deal with the prosecution for offences under the Act in a casual or routine manner. Parliamentary concern in the matter is adequately reflected in strengthening the measures prescribed by the statute. The Court has no justification for ignoring the seriousness of the subject.

The Supreme Court directed the trial Court to proceed with the case in accordance with law and dispose it of as expeditiously as possible.

The survey of the Water Act reveals that the Act tries to regulate water pollution through a system of 'command and control'. 'Water pollution' has been defined in such a way that almost every aspect of pollution has been covered. Various powers have been given to Central and State Pollution

Control Boards, Central Government and State Governments to ensure effective implementation of the provisions Deterrent punishments may be imposed in case of violation of the provisions Mandatory minimum punishment has been provided The whole object of the enactment is to control the pollution of rivers and streams which has assumed considerable importance and urgency in recent years as a result of increasing industrialisation and urbanisation The Act is intended to ensure that the domestic and industrial effluents are not allowed to be discharged into water courses without adequate treatment

So far as judicial approach in India towards prevention and control of water pollution is concerned, a few more examples will further clarify the position In *M C Mehta (Calcutta Tanneries' Matter) Case*,[128] Calcutta tanneries (about 550 in number) were discharging untreated noxious and poisonous effluents into River Ganga thereby polluting the land and river In view of categorical findings of NEERI and several reports of W B Pollution Control Board, the setting up of common effluent treatment plant at the existing location of tanneries was not possible since they were located in thickly populated residential areas, offering little or no scope for future expansion, modernisation or installation of effluent treatment plants Consequently, the Calcutta tanneries were directed by the Supreme Court to shift or relocate to new leather complex set up by the West Bengal Government

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128 *supra* note 82 For directions of the Court to the tanneries located in Jajmau near Kanpur restraining them from discharging effluents and sewage into the river Ganga without appropriate treatment, *see M C Mehta* v *Union of India*, AIR 1988 SC 1037 For directions of the apex Court against pollution caused by enormous discharge of untreated effluent in the river Palar by the tanneries and other industries in the State of Tamil Nadu, *see Vellore Citizens Welfare Forum* v *Union of India*, AIR 1996 SC 2715

In spite of all efforts made by Supreme Court and State Government, tanneries did not cooperate in their relocation to new complex even after giving clear undertaking in that behalf to the Supreme Court. The Court observed that the tanneries which decline to relocate should not be permitted to function at the present sites and ordered their unconditional closure on a specified date (i.e. 30.9.1997). The Court also issued directions for their relocation, payment of compensation by them for reversing the damage and for rights and benefits to be made available by them to their workmen. Green Bench of Calcutta High Court was further directed to monitor the manner of compliance.

In *News Item "Hindustan Times" A.Q.F.M. Yamuna* v. *Central Pollution Control Board*,[129] the Supreme Court ordered every industry in Delhi not to discharge their effluent into any drain leading to River Yamuna or to River Yamuna itself which has the effect of polluting the river.

In *Ramjet Patel* v. *Nark Upshot Margi Dashiki Munch*,[130] a public interest litigation was filed contending that the main water pipelines, which supplied water to Jabalpur city, passed through the place where a number of dairy-owners were storing cow/buffalo dung, waste of the dairy products and urine of hundreds of cattle. All this was stored near the pipelines which in turn was likely to contaminate the pure water supplied to the residents of the city for home consumption.

The High Court held that keeping all these dairies around these water supply lines was a great hazard to the lives of the people of Jabalpur and therefore,

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129. (2000) 9 SCC 440.
130. (2000) 3 SCC 29.

ordered the dairy-owners to shift away from the present location. The Court, however, gave certain directions for the rehabilitation of each dairy-owner individually.

On an appeal to the Supreme Court, Saghir Ahmad, J. observed:

> Supply of pure drinking water is the statutory duty of the Municipal Corporation and the supply of such water has to be ensured to every citizen. In a situation, where the interest of the community is involved, the individual interest must yield to the interest of the community or the general public... Milk dairies and the keeping of cattle at the place in question... can not be permitted to continue... specially in the proximity of the main pipeline through which drinking water is supplied to the city of Jabalpur.[131]

The Court however, directed the Municipal Corporation to pay Rs. 5,86,000 to the petitioners at the time of their shifting to the new locations, after deducting the amount of subsidy as may have already been paid by the Government for the expenses they incurred in the setting up of the biogas plant as per the orders of the Court.

In *A.P. Pollution Control Board II case*,[132] the respondent attempted to establish its oil processing plant, a hazardous industry as per the notification issued by MoEF dated 27.9.1988, within a 10 km radius of two major water reservoirs (prohibited area) in Andhra Pradesh, the Osman Sagar and Himayat Sagar, which cater to the needs of over 50 lakhs people of Hyderabad and Secunderabad.

On the basis of exhaustive scientific reports, the Court held that if the said industry is permitted to be established, there is likelihood of serious pollution to

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131. *Id.* at 38-39.
132. *supra* note 81.

the drinking water in these lakes. The fundamental objective of the Water Act is to provide clean drinking water to the citizens. If the State grants exemption to a particular industry within the area prohibited for location of polluting industries, exercise of such a power must be treated as arbitrary and contrary to public interest and in violation of the right to clean water under Article 21 of the Constitution of India 'The Government could not pass such orders of exemption having dangerous potential unmindful of the fate of lakhs of citizens of the twin cities to whom drinking water is supplied from these lakes Such an order of exemption carelessly passed, ignoring the "precautionary principle", could be catastrophic'

In *M.P. Rameau* v. *District Forest Officer*,[133] it was submitted that prawn, shrimp or aquaculture are of two types i e which are done in the fresh water and / or brackish / saline water. Those who carry on these activities dug bore-wells which have led to the ground water becoming saline and thereby affecting potable water. It was also submitted that the chemicals are being extensively used which affect to a large extent the neighbouring lands and surrounding agricultural lands have become, for all practical purposes, useless for cultivation of paddy and other crops

It was held by Andhra Pradesh High Court that the directions issued by the apex Court in *S. Jagannath* v. *Union of India*,[134] are not confined only to matters relating to shrimp culture or prawn culture in brackish / saline water within CRZ (Coastal Regulation Zone) but also aqua culture and prawn culture in fresh water. As per these directions an aqua culture authority has been

133. AIR 2002 Andhra Pradesh 256
134 AIR 1997 SC 811

constituted and functioning. Carrying on these activities without obtaining its prior permission must be held to be illegal and in any event, as such activities cause pollution, the same should not be allowed to continue. These activities, if at all, can be carried on only after obtaining the prior permission of the competent authority and upon strict compliance with the directions of the apex Court.

However, inspire of all this, the position is far from satisfactory. Take for instance, the example of the extent of water pollution of a few major Indian rivers. Faith may or may not be able to move mountains, but only faith can continue to draw devotees to the country's holiest river. The coli form test for bathing standards stipulates a safety limit of 10,000 per 100 ml, but Ganga in Bananas has revealed counts of as much as 4 million. This is the situation 16 years after the ambitious Ganga Action Plan (GAP) was launched in this holy city to clean the river. The first phase of the plan envisaged the treatment of 873 MLD (Million Litres per day) of waste water flowing into the river along 25 towns in Uttar Pradesh, Bihar and West Bengal. This was only roughly 65 percent of the total 1,340 MLD of waste water in the river. The original dead line for the completion of GAP-I was March, 1990, but it was extended upto March 2000. Even so, the plan could meet only 35 percent of the target, or 305 MLD, at a cost of Rs. 452 crore. The extension of GAP-I notwithstanding, GAP-II was also launched in 1993 and was scheduled to be completed by December 2001. But now GAP-II has also been extended to 2005.[135]

This reflects the story of poor planning and poor implementation. Most of the sewage treatment plants (Steps) are either non-functional or operating below satisfactory levels. In May and June, 2001, the CPCB inspected 35 Steps - 10

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135. Ashish Sharma, *Ganga Inaction Plan*, Business Standard (New Delhi) dated 4.9.2001: CSE -- India Green File, September 2001, No. 165 at 51.

in U.P., 3 in Uttaranchal, 15 in West Bengal and 7 in Bihar - and found serious lapses. CPCB has reminded that STPs were originally planned for just about 65 percent of the total in 1985 while the volume of sewage has increased significantly since then. There have been some other changes also during this period. The Central Ganga Authority (CGA), constituted to oversee the implementation of GAP in February 1985, was renamed as the National River Conservation Authority (NRCA) in September, 1995. The renaming did not help, for NRCA - the apex body headed by the Prime Minister - has met only twice, in 1994 and 1997. Similarly, the Ganga Project Directorate (GPD) which was constituted in June 1985, was renamed as the National River Conservation Directorate (NRCD) in June 1994. More significantly, the authorities are now talking in terms of a National River Conservation Plan (NRCP) rather than GAP. The change means that other rivers have been brought into the ambit of the new, even more ambitious plan. While GAP would need Rs. 1,200 crore for completion, NRCP is estimated to cost Rs. 3,300 crore and would be spread over 25 rivers across 150 towns in 16 States. All new projects are being sanctioned under NRCP rather than GAP-II. The key change is that from now on the Central Government would bear 70 percent of the cost while the rest would come from the States concerned. By contrast, GAP was fully funded by the Centre. M.C. Mehta feels that GAP-II should not have been launched at all when it was clear that the first phase had failed to yield results.[136]

Every day 2,500 MLD of sewage is flowing into River Yamuna and only 1,270 MLD is being treated presently. The remaining sewage is pouring into the Yamuna as it is, said Dr. R.C. Trivedi, a senior scientist associated with the

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136. *Ibid.*

water monitoring unit of the CPCB. He remarked that "what we think is the Yamuna flowing through Delhi is in fact nothing but sewage".[137]

The River Yamuna that flows through the Indian Capital faces a serious threat of contamination with about 1.3 billion litres of untreated sewage being discharged into it every day. This was stated in the Lok Sabha by the Minister of Environment and Forests. It has been confirmed by a joint inspection by the CPCB and a public health organisation associated with the urban development ministry. The Minister said that changing operations had been taken up in 21 towns along the Yamuna river as part of Rs. 5 billion Yamuna Action Plan (YAP), conceived six years ago. The Plan included such works as interception and diversion of sewage as well as creation of sewage treatment plants, low cost toilets and crematoria, as also river front development. Already Rs. 4.4 billion had been spent on the plan.[138]

The Supreme Court had set March 31, 2003 as the deadline for clearing up the river but not much has happened. According to CPCB Chairman, D.K. Biswas, 'the river urgently needs some fresh water to survive'. By the time the Yamuna nears Delhi, it loses nearly 90 percent of its water. Most of the water is taken out of the river at the Wazirabad barrage for irrigation and drinking purposes. The left out mixes with sewage from over two dozen drains.[139]

Gomti river, the lifeline of Lucknow city is shrinking and stinking. The city gulps down millions of litres of water from the river every day and throws back tons of chemical and faecal waste. A workshop on "Rejuvenating Gomti" to

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137. *Needed A Ganga to Resuscitate Yamuna, or It Could Go the Saraswati Way*, The Pioneer (New Delhi) dated 12.4.2001: CSE -- India Green File, April 2001, No. 160, at 31.
138. *1.3 bn litres of untreated sewage bane of Yamuna*, Business Standard, dated 6.12.2000: CSE - India Green File, December 2000, No. 156 at 39-40.
139. *Maili Yamuna*, Hindustan Times (New Delhi), dated 15.09.2001: CSE - India Green File, September 2001, No. 165 at 52.

understand the Gomti Action Plan reported that the State Capital, at present, is facing its worst ever water crisis and parts of the city are on the verge of water-riots. Course of the river as it passes through Lucknow was the most polluted patch with the oxygen level dipping to zero at certain points and posing a serious threat to aquatic life. An earstwhile minister admitted that the Gomti Action Plan was moving at a sluggish pace.[140]

It has been said in religious books that Narmada river is best among all rivers and all sins are washed out by the mere sight of Mother Narmada. Although thousands of devotees take holy dip in this sacred river each day but due to indifference the holy-water of the river is being polluted gradually. The nala of Kori Ghat in Hoshangabad is bringing filth from the entire city and draining into Narmada river. The flow of dirty water can be seen mixing with the water of the river. The devotees are very unhappy on account of increasing pollution of Narmada river.[141]

River Palaar (river of milk) that once nursed the fertile farmlands of Vellore district in Tamil Nadu, has now turned into a river of poison due to discharge of untreated effluents by numerous leather tanneries in the district. Thousands of hectares of farmlands had been rendered uncultivable, ground water had been irreversibly poisoned with the populace deprived of access to safe drinking water, according to Pasumai Thayagam (green motherland), an environmental action group headed by Dr. P. Anbumani, who is the son of PMK founder leader Dr. Ramadoss. The Supreme Court directive on reversing

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140. Amita Verma, *Lucknow citizens worry over Gomti pollution*, Asian Age (New Delhi) dated 20.05.2001: CSE - India Green File, May 2001, No. 161 at 49-50.

141. *Sharp rise in Narmada pollution*, Central Chronicle (Bhopal), dated 6.12.2000: CSE - India Green File, December 2000, No. 156 at 40-41.

the pollution and stoppage of further contamination had not been implemented in sprit and was violated in content, he alleged. He also alleged that there was a nexus between the tannery owners, politicians, bureaucracy and even the press. Of the total number of leather tanneries in India, over 53 percent are in Tamil Nadu, with most of these concentrating in the Palaar River basin. He said that a number of scientific studies revealed that about 40,000 farming families in 300 villages of Vellore district were deprived of their livelihood due to the devastation of the land and water resources.[142]

The North Karanpura coalfields in Jharkhand are facing threat of pollution following detection of alarming levels of lead and other heavy metals in the sediments of local rivulets, the Damodar and Safi rivers. A study by Nitish Priyadarshi, Principal Investigator, Department of Science & Technology, has found threatening levels of lead, arsenic, iron, chromium and manganese in the sediments and surface water of these rivers which might cause major health problems to mining population. The study warned that long term exposure to lead present in water might result in general weakness, dyspepsia, headache, perpetual drowsiness, high blood pressure and anemia.[143]

From the coal mines in Jharkhand, the Damodar carries arsenic to West Bengal and finally to the Bay of Bengal. Slow and steady arsenic poisoning causes dermatitis, eczema, ulceration and pigmentation of skin and cancer.[144]

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142. *Palaar turns into a poisonous river*, Central Chronicle (Bhopal), dated 14.12.2000: CSE – India Green File, December 2000, No. 156 at 41.
143. *Alarming level of lead detected in Damodar, Safi rivers*, Times of India (Bombay) dated 16.05.2001: CSE - India Green File, May 2001, No. 161 at 49.
144. Manoj Prasad, *Arsenic contaminating waters of Damodar river*, Indian Express (New Delhi), dated 28.05.2001: *Id.* at 51.

Water Act is no doubt a comprehensive legislation aimed at prevention and control of water pollution. The CPCB and SPCBs, created under the Act, should develop a comprehensive plan to ensure that hazardous substances are not discharged into the water courses and prescribed standards are strictly complied with. The Boards have enormous powers under the Act including the power to close, prohibit or regulate any industry, operation or process. Proper and timely use of these powers with determination is the need of the hour and the matters should not always be left with the courts to decide.

5.3 Water (Prevention and Control of Pollution) Cess Act, 1977

The Water Act contemplates the creation of CPCB at the national level and SPCBs at State level. The Central Government and the State Governments have to provide funds to their Boards for carrying out the purposes of the Act. However, due to limited resources, the respective governments may not be able to provide adequate funds. Therefore, the Water (Prevention and Control of Pollution) Cess Act, 1977[145] (hereinafter 'the Water Cess Act') was passed "to provide for the levy and collection of cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water Act, 1974".[146]

The only purpose of the Water Cess Act is to provide for levy and collection of cess on water consumed by persons carrying on certain industries with a view

145. Act No. 36 of 1977. As amended by Acts 53 of 1991 and 19 of 2003.
146. The Preamble.

to augment the resources of the Central Board and the State Boards.[147] The cess is payable by every local authority and every person carrying on any industry[148] and is to be calculated on the basis of water consumed.[149] Whoever knowingly furnishes any false return or wilfully or intentionally evades or attempts to evade the payment of cess, is punishable with imprisonment which may extend to six months or with fine which may extend to one thousand rupees or with both.[150]

The Central Government has power to exempt any industry from the levy of water cess[151] and also has the power to make rules for carrying out the purposes of the Act.[152]

Where the amount of water cess was paid under protest and the very collection of water cess was clearly illegal and without authority of law, the claim of the respondents for refund can not be denied merely on the ground that the petitioners passed on the money to the State Government, which in turn gave it to the Central Government and later the Central Government appropriated the same by passing it back to the various SPCBs.[153]

The object of Water Act is to control the water pollution and to ensure that industrial effluents are not discharged into the water courses without adequate treatment. The Water Cess Act is not an enactment to regulate and control

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147. *Member Secretary, Andhra Pradesh State Board for Prevention and Control of Water Pollution* v. *Andhra Pradesh Rayons Ltd*, (1989) 1 SCC 44: AIR 1989 SC 611.
148. "Industry" includes any operation or process, or treatment and disposal system, which consumes water or gives rise to sewage effluent or trade effluent, but does not include any hydel power unit. [Section 2(c)].
149. Section 3.
150. Section 14.
151. Section 16.
152. Section 17. *See* Water (Prevention and Control of Pollution) Cess Rules, 1978.
153. *U.P. Pollution Control Board* v. *M/s Kanoria Industrial Ltd.*, AIR 2001 SC 787.

pollution but a fiscal measure to raise revenue for augmenting the resources of the Pollution Control Boards [154] The Water Cess Act was promulgated with a view to levy and collect cess from the units which were thought to cause pollution and the funds so realised were to be entrusted to appropriate authorities, *inter alia*, for remedial measures [155] Pollution Act may be a regulating Act but Cess Act is a fiscal enactment Therefore, we have to look merely at what is clearly said There is no room for any intendment and there is no room for bringing within the provision of the Act anything by implication [156]

A rebate of seventy percent of the cess is given to the person or local authority if any plant for the treatment of sewage or trade effluent has been installed [157]

5.4 Air (Prevention and Control of Pollution) Act, 1981

> An average person requires over thirty pounds of air a day or about six pints every minute and he has to take it as it comes He would not readily stand in sewage or drink dirty water Yet daily the individual draw 26,000 breaths, between 18 and 22 each minute, many of which - if not in some cases - are of filthy air [158]

Air is the mixture of various gases and it constitutes earth's atmosphere Fresh air may be defined as that air in which various constituents are present in the scientifically accepted proportion and no such other element is present in it which renders it unfit for use According to scientifically accepted norm, one unit of unpolluted or fresh air consists of 78 09% nitrogen, 20 94% oxygen, 0 93% argon, 0 03% carbon dioxide and 0 01% gases like hydrogen, helium, neon, krypton, xenon and oxides of nitrogen sulphur and carbon which are the

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154 *Saraswathi Sugar Mills* v *Haryana State Board* AIR 1992 SC 224

155 *Union of India* v *National Hydroelectric Power Corporation Ltd*, (2001) 6 SCC 307

156 *Rajasthan State Electricity Board* v *Cess Appellate Committee*, AIR 1991 SC 597, *see also The A P Gas Power Corporation Ltd* v *The Appellate Committee Water (P & C P) Cess Act*, AIR 2001 Andhra Pradesh 523

157 Section 7

158 R. ARVILL, MAN AND ENVIRONMENT, 97 (1st ed 1967)

products of natural processes like volcanic eruptions, decay of vegetation, forest fires and dust storms. If this ratio is disturbed due to presence of any foreign substance in it, the air will be deemed to be polluted or contaminated air, unfit for use.

Pollution of air is more widespread in its effects than other forms of pollution. Atmosphere is boundary free and pollution of air may cause adverse effects hundreds of miles away in other areas. If water is polluted, one can avoid at least for some time to drink it or he may drink it after purification. But one can not avoid breathing polluted air, he has to take it as it comes.

The nexus between air pollution and health of human beings as well as ecology has been established beyond doubt. 'Cause and effect' relationship has been proved between air pollution and diseases. The U.S. air strikes may be limited to Afghanistan, but their effects on environment could well reach India, experts warned. Dilip Biswas, CPCB Chairman, warned that 'if the bombing continues at this pace, it would lead to major increase in air pollution levels over Afghanistan and these pollutants could automatically reach Indian skies also. This happened during the Gulf war, when the Suspended Particulate Matter (SPM) levels went high even in neighbouring countries and it could happen now'.[159] The same is true with regard to recent air strikes by U.S. in Iraq.

The chemicals which these bombs contain, besides polluting the environment can cause a number of diseases. The kind of explosives being used release many hydrocarbons which are not naturally present in the environment. According to

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159. *Striking at environment?* Press Trust of India, Newstime (Hyderabad) dated 26th October, 2001: CSE - India Green File, October 2001, No. 166 at 4,5.

a report by Coghill Research Laboratories, a UK based organisation, some one million bullets still lie in the deserts of Gulf region after the Gulf war where subsequently the incidence of leukemia, cancer and birth defects have risen sharply as a result of environmental pollution [160] Emissions into the air cause changes in weather also. Global temperature as a whole has increased Concern has been expressed over the depletion of ozone layer enclosing the earth

Common air pollutants, their sources and pathological effects on man may be understood with the help of the following table [161]

Sl.	Pollutants	Source	Pathological Effects on man
1	Aldehydes	Thermal decomposition of fats, oils, glocerol	Irritate nasal and respiratory tracts
2	Ammonia	Chemical Processes - dyemaking, explosives, fertilizers	Inflame upper respiratory passage
3	Arsenic	Coal and oil furnaces, glass manufacturing	Damage kidneys, cause jaundice, lung and skin cancer
4	Benzene	Refineries, motor vehicles, smelters	Long-term exposure may cause leukemia
5	Cadmium	Coal and oil furnaces	Long-term exposure damages kidneys
6	Carbon monoxide	Gasoline motor exhausts, steel plants, smelters, oil and coal furnaces	Damages lungs, weakens bones, starves body of oxygen, damages heart
7	Chlorine	Chemical industries	Attacks respiratory tract, mucous membrances
8	Fluoride Ions	Smelters, steel plants	Affects teeth
9.	Hydrocarbons	Unburned gasoline vapour	Fog formed with combination of oxide of nitrogen affect respiratory system
10.	Hydrogen cyanide	Fumigation, blast furnaces, chemical manufacturing	Interfere with nerve cells, produce dry throat, affect vision, headache, irritates eyes, lungs

160 *Ibid*

161. CHHATWAL, *et al* , ENCYCLOPAEDIA OF ENVIRONMENTAL POLLUTION AND ITS CONTROL, 227, 230, 233 (vol. 1, 1989)

11.	Hydrogen Chloride	From incinerators	Irritates eyes, lungs
12.	Hydrogen fluoride	Petroleum refineries, fertilizer plants	Irritates skin, eyes, mucous membrances.
13.	Hydrogen Sulfide	Refineries, sewage treatment, pulp mills, chemical industries	Irritate eyes, causes nausea, bad smells.
14.	Manganese	Steel plants, power plants	Long-term exposure cause Parkinson's disease.
15.	Nickel	Smelters, coal and oil furnaces.	High exposure may cause lung cancer.
16.	Nitrogen oxides	Soft coal, motor vehicle exhausts	Bronchitis, lowers resistance to influenza
17.	Ozone	Formed in sunlight from oxides of nitrogen and hydrocarbons	Irritates eyes, aggravates asthma
18.	Phosgene	Chemical and dye manufacturing	Induce cough, irritation and fatal pulmonary oedemia
19.	Lead	Smelters, motor vehicles exhausts.	Brain damage, affects growth, high B.P.
20.	Sulphur dioxide	Smelters, coal and oil combustion	Obstructs breathing, irritates eyes
21.	Suspended solids (as soot, smoke)	Manufacturing process, incinerators	Cause Emphysema, eye irritation and possibly cancer

The air we breathe is a mixture of nitrogen and oxygen with minor constituents like carbon dioxide and trap gases. Pollutants in the form of dust, smoke, industrial and automobile exhaust, gaseous and particulate matters are found in the air. Nature and amount of such pollutants vary from place to place depending upon population, vehicular density and location of industrial units etc. Lungs are the major organs affected by air pollution. Chronic bronchitis and airways obstruction are the result of long term exposure to air pollution. Organic matters including dust can cause allergic reactions producing allergic alveolitis. Inorganic dust may get deposited in the lungs and produce fibrosis. This produces respiratory disability and decreased work efficiency. Exposure to dust may lower lung defences and clearing mechanism, resulting in rise of

infections particularly tuberculosis. Such occupational exposures may lead to lung cancer as well.[162]

Like human beings, air pollution adversely affects animals also. The loss of appetite, reduced milk, joint stiffness have been common symptoms. Plants are more sensitive to air pollution than animals. Plants show reduced photosynthesis in the presence of pollutants and so the air purifying action of plants i.e. absorbing carbon dioxide and releasing oxygen is reduced, resulting in a vicious circle of increased pollution. Air pollution creates problems not only for the animates but also for the inanimates. World's wonder Taj Mahal at Agra is the worst example of stone cancer. Therefore, air pollution has a detrimental effect not only on the health of the people but also animal life, vegetation and property.

United Nations Conference on Human Environment held at Stockholm in June, 1972, resolved to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution. Since India participated in the Conference, the Government of India decided to implement the decisions of the said Conference in so far as they relate to the preservation of the quality of air and control of air pollution. The Government enacted the Air (Prevention and Control of Pollution) Act, 1981 (hereinafter to be referred to as 'the Act' or 'the Air Act') under Article 253 of the Constitution which empowers the Central Government to make laws for implementing decisions taken at international Conferences. This became Act NO. 14 of 1981 and came into

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162. *Obayya Pujary* v. *Member Secretary, K.S.P.C.B. Bangalore*, AIR 1999 Karnataka 157.

force on 29th March, 1981. Since in the effective implementation of its provisions, some administrative and practical difficulties were felt by the implementing agencies, the Act was amended in the year 1987.[163]

The object of the Act as set out in the .Preamble is 'to provide for the prevention, control and abatement of air pollution, for the establishment, with a view to carrying out the aforesaid purposes, of Boards, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith'. The Act defines 'air pollution'[164] as presence in the atmosphere of any 'air pollutant'[165] which in turn means 'any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment'. This definition of air pollution under the Act is considered to be quite satisfactory.

The basic framework of the Act is similar to that of Water Act, 1974. Central and State Pollution Control Boards constituted under Water Act have powers to issue and revoke licences of polluting industries, enforce emission standards and to frame rules and regulations for the prevention, control and abatement of air pollution also. In any State in which Water Act is not in force, the State Government is empowered to constitute a State Board for the prevention and control of air pollution by notification in the Official Gazette. The provisions of the Act relating to powers and functions of the Central and State Pollution Control Boards are similar to those under the Water Act.

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163. Air (Prevention and Control of Pollution) Amendment Act, 1987, i.e. Act 47 of 1987.
164. Section 2(b).
165. Section 2(a).

In a significant provision, the Act authorises the State Government to declare, after consultation with the State Board, any area or areas within the State as 'air pollution control area or areas' by notification in the Official Gazette. It may also alter, extend, reduce an area or merge one or more existing air pollution control areas. It may prohibit the use of any fuel or burning of any material (not being fuel) and may also direct that only approved appliances should be used in an air pollution control area.[166]

For the establishment or operation of any industrial plant in an air pollution control area, previous consent of the State Board is needed. Previous consent of the State Board was made necessary in 1987 by way of amendment in the Air Act. If a person was operating any industrial plant in an air pollution control area before the introduction of consent provision, he was to file an application for obtaining the consent of the State Board within a period of three months from the date of introduction and might continue to operate the plant till the disposal of his application by the Board.[167]

The application for the grant of consent has to be filed in the prescribed form accompanied with prescribed fee.[168] The Board may, while granting consent, impose certain conditions and if these conditions are not complied with, the Board may cancel the consent after giving the person concerned, a reasonable opportunity of being heard. The Act imposes a duty on the State Board either to give or refuse consent within four months from the date of the receipt of consent application.

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166. Section 19.
167. Section 21(1).
168. Section 21(2).

The Act empowers the State Board to lay down emission standards for automobiles and State Government has to ensure compliance of such standards Like Water Act, under the Air Act also, the State Board has power to obtain information regarding the types of air pollutants emitted into the atmosphere,[169] power to take samples of air or emission,[170] power of entry and inspection,[171] power to lay down standards,[172] power to take remedial measures,[173] power to make application to court for restraining persons from causing air pollution,[174] power to give directions,[175] power to make a complaint to the court,[176] and power to appoint Board analyst [177]

The other provisions of the Air Act regarding powers of Central Government, powers of State Government, and their respective powers to make rules,[178] analysis of samples in the laboratory, fund, account and audit, offences by companies and government departments, citizens' suit, appeal to the Appellate Authority and punishments and penalties are also similar to those under the Water Act

The recent judicial trends towards prevention, control and abatement of air pollution may be determined with the help of a few examples of decisions of

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169 Section 25
170 Section 26
171 Section 24
172 Section 22
173 Section 23
174 Section 22A
175 Section 31A
176 Section 43
177 Section 29(2)
178 *Central Rules* Air (Prevention and Control of Pollution) Rules, 1982, Air (Prevention & Control of Pollution) (Union Territories) Rules, 1983
State Rules Andhra Pradesh Air (Prevention & Control of Pollution) Rules, 1982, Gujrat Air (Prevention & Control of Pollution) Rules, 1983, Kerala Air (Prevention & Control of Pollution) Rules, 1984, Maharashtra Air (Prevention & Control of Pollution) Rules, 1983, Uttar Pradesh Air (Prevention & Control of Pollution) Rules, 1983, and West Bengal Air (Prevention & Control of Pollution) Rules, 1983

the courts in India In *Obayya Pujary's case*,[179] the Court was called upon to decide the effect of unplanned stone crushing being carried out in the State of Karnataka upon the health of the people of the State. The Court held that the dust, smoke and gases emitted from the conduct of the business are surely affecting the lungs and other major organs of the people involved in the business and living in the surrounding areas. Besides human beings, the animals and the vegetation including crops are likely to be affected unless protected 'The inaction of the State and lapses of the Board to take effective measures has cast a duty upon us to issue appropriate directions for protecting the life of the people and ecology of the area'. The Court directed the State Government to identify 'safer zones' to be certified by the Karnataka State Pollution Control Board within a period of six months and take steps for shifting of all existing stone crusher units in the State into those safer zones within a period of one year. It held

> All stone crushing units located at present locations shall be deemed to be closed after a period of one year, unless their units fall in the declared 'safer zones' and shall not be permitted to carry on their business of stone crushing on any ground or pretext whatsoever.[180]

In *Smt. Ved Kaur Chandel* v. *State of H.P.*,[181] on the question of setting up of a rubber industry, the High Court held that heavy responsibility is on the SPCB to ensure that the respondent commences production after fulfilling all the conditions laid down in the consent letter and continues strict observance of all the laws pertaining to environment.

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179. *supra* note 162. *See also Ishwar Singh's case*, AIR 1996 Punjab & Haryana 30, *M/s Susheel Traders* v. *Municipal Corporation for Greater Bombay*, AIR 2001 Bombay 166, *Ramanath Das* v *Collector, Balasore*, AIR 2002 Orissa 132.

180. *Id.* at 166.

181. AIR 1999 Himachal Pradesh 59.

In *M.C. Mehta (Taj Trapezium Matter)* v. *Union of India*,[182] a public interest litigation was filed alleging degradation of Taj Mahal at Agra due to atmospheric environmental pollution. The petitioner contended that the foundries, chemical/ hazardous industries and the refinery at Mathura are the major sources of damage to the Taj. The Sulphur Dioxide emitted by the Mathura Refinery and the industries when combined with Oxygen and moisture in the atmosphere results in "acid rain" which has a corroding effect on the gleaming white marble. Industrial / refinery emissions, brick kilns, vehicular traffic and generator sets are primarily responsible for polluting the ambient air around Taj Trapezium (TTZ). He further stated that white marble has yellowed and blackened. It is inside the Taj that the decay is more apparent by ugly brown and black spots. Fungal deterioration is worst in the inner chamber where the original graves of Shah Jahan and Mumtaz Mahal lie. The Taj - a monument of international repute - is on its way to degradation due to atmospheric pollution and it is imperative that preventive steps are soon taken. The petitioner sought appropriate directions to the authorities concerned to take immediate steps to stop air pollution in the TTZ and save the Taj.

The Supreme Court monitored this petition for over three years and while deciding the case acted on the opinions of different expert committees like four NEERI reports, two Vardharajan reports and several reports by the Board. The Court held:

> It can not be disputed that the use of coke / coal by the industries emits pollution in the ambient air. The objective

182. (1997) 2 SCC 353. *See also M.C. Mehta* v. *Union of India*, (1999) 6 SCC 611; *M.C. Mehta* v. *Union of India*, AIR 2002 SC 3696.

> behind this litigation is to stop the pollution while encouraging development of industry. The old concept that development and ecology can not go together is no longer acceptable. Sustainable development is the answer. The development of industry is essential for the economy of the country, but at the same time the environment and the ecosystems have to be protected...
>
> After examining all the reports and taking into consideration other material on the record, we have no hesitation in holding that the industries in the TTZ are active contributors to the air pollution in the said area. NEERI and Vardharajan reports have specifically recommended the relocation of industries from the TTZ. Although the Board has placed on record a list of 510 industries which are responsible for air pollution but in view of our order dated 11.04.1994,[183] we are confining this order only to 292 industries located and operating in Agra.

In *M.C. Mehta* v. *Union of India*,[184] the Expert Committee of the Central Pollution Control Board came to the conclusion that emissions from hot mix plants located in Delhi contain particulate matter and sulphur dioxide beyond prescribed limit and therefore, they are categorised as hazardous industry (Ha Category). As per Master Plan 2001, all hazardous / noxious industries should be shifted out of Delhi. Since most of these plants are located near residential areas, they pose severe health risks to inhabitants. The Committee expressed the opinion that even if hot mix plants are located outside Delhi, except during severe winter, the quality of mix is not expected to fall if the desired temperature of the hot mix containers are maintained. Therefore, relocation of hot mix plants will not pose any serious problem. The Court held :

> It is obvious from the analysis report that the emission of particulate matters in respect of these hot mix plants is 679 mg and 829 mg respectively. The permissible limit under the

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183. *Order of the Court on 11.04.1994*: ".... We are of the view that the shifting of industries from the Taj Trapezium has to be made in a phased manner. NEERI's report indicates that the maximum pollution to the ambient air around Taj Mahal is caused by the industries located in Agra. We, therefore, as a first phase, take up the industries situated in Agra for the purpose of the proposed shifting outside Taj Trapezium".

184. (1999) 7 SCC 534. *See also M.C. Mehta* v. *Union of India*, (2003) SCC 376.

> Environment Protection Rules is 150 mg. The hot mix plants having been categorised as hazardous industries (Ha) under Master Plan 2001, have to be relocated.

The Supreme Court directed that hot mix plants (43 in number) should stop functioning and operating in the city of Delhi and may relocate / shift themselves to any other industrial estate in NCR (National Capital Region). The Deputy Commissioner of Police concerned was directed to ensure closure and file compliance report within 15 days.

In *M.C. Mehta* v. *Union of India (Matter Regarding Brick Kilns)*,[185] the Delhi Pollution Control Committee came to the conclusion that 246 brick kilns operating in Delhi fall in 'H' category. The CPCB also reported that moving chimney brick kiln should not be permitted in Delhi as it is highly polluting in nature and hence classified as 'Ha' category. However, the Board pointed out that only fixed chimney claybrick kilns may be allowed to be operated provided they switch over to flyash-sand-lime bricks manufacturing, which does not require firing. Dr. B. Sen Gupta, Senior Scientist of the CPCB submitted before the Court that various technologies have been developed for making bricks from flyash-sand-lime mixture. In the flyash technology, the pollution is almost negligible since there would be no kiln and no firing to cure the bricks. The bricks are only to be steamed with electricity or by the process of autoplates. The Court held:

> Keeping in view the report of the Delhi Pollution Control Committee and also of the Board, we have no hesitation in holding that the 246 brick kilns operating in the various zones of Union Territory of Delhi are 'H' category industries and as such

185. (1998) 9 SCC 149. *See also M.C. Mehta* v. *Union of India*, (2000) 7 SCC 422.

> cannot operate in the said territory... These brick kilns may relocate / shift themselves to any other industrial estate in the National Capital Region (NCR).

There are three cases in a row in which the Supreme Court dealt with the problem of vehicular pollution and gave certain directions. These are :

1. *M.C. Mehta* v. *Union of India,*(Matter regarding diesel emissions).[186]
2. *M.C. Mehta* v. *Union of India*, (Matter regarding emission standards for vehicles).[187]
3. *M.C. Mehta* v. *Union of India*, (Matter regarding emission standards for vehicles).[188]

In first *M.C. Mehta*, the Supreme Court observed that Bhure Lal Committee report reveals that private (non-commercial) vehicles comprise 90% of the vehicles plying in Delhi. More than 90% of the nitrogen oxide (NOx) and respirable particulate matter (RSPM) from vehicular exhaust over Delhi is due to diesel emissions. Impairment of visibility and haze-like conditions are also attributed to tiny suspended particulate matter in the air. Based on the report of its scientific panel, the California Air Resource Board formally designated diesel particulate as a toxic air contaminant and declared that it had potential to cause cancer. It was estimated that chronic exposure to such toxic air contaminant would lead to 300 additional cases of lung cancer per million people. In these circumstances, the Court held :

> It is indeed a matter of serious concern - the very right to life of the citizens is at stake. Considering the gravity of the situation and taking note of effects of diesel exhaust on the health of citizens which are of extremely serious nature, we direct the

186. (1999) 6 SCC 9.
187. (1999) 6SCC 12.
188. (1999) 6 SCC 14.

> learned Additional Solicitor General to inform the Court, on an affidavit of a responsible officer about the number of diesel and petrol driven private vehicles registered in NCR in 1997 and in 1998... and from 1.1.1999 to 31.3.1999.

This information was held necessary in order to decide whether registration of diesel vehicles should be suspended forth with as prayed in the application.

In second *M.C. Mehta*, the Court held the information furnished by Additional Solicitor General about the number of diesel and petrol driven private vehicles registered in NCR in 1997, 1998 and 1.1.1999 to 31.3.1999 as 'totally incomplete'.

On the basis of suggestions made by Bhure Lal Committee and the applicant and hearing counsels for various parties (automobile manufacturers), the Court issued certain directions. Important of them are -

- All private (non-commercial) vehicles which conform to Euro II norms may be registered in NCR without any restriction.
- All private (non-commercial) vehicles should conform to Euro I norms by 1.6.1999. All private (non-commercial) vehicles should conform to Euro II norms by 1.4.2000. Till 1.4.2000, 250 diesel driven vehicles per month and 1250 petrol-driven vehicles per month may be registered in NCR provided they conform to Euro I norms. From 1.4.2000 no vehicle should be registered unless it conforms to Euro II norms.
- The ban on the registration of diesel driven taxis should be strictly enforced unless the taxis also conform to Euro II norms.
- The registering authority may register the vehicle on a certificate of the manufacturer, duly authenticated by the authorised officer certifying that the vehicle concerned conforms to Euro I / Euro II norms.

The Court requested Bhure Lal Committee to further examine the matter and submit its report after giving opportunity to automobile manufacturers likely to be affected by the above stated directions.

In third *M.C. Mehta*, the Court clarified that restrictions on registration imposed by the order of the Court in second *M.C. Mehta* do not apply to the registration of vehicles which are fitted with Compressed Natural Gas (CNG) kits and ply on CNG only.

In *M.C. Mehta* v. *Union of India*,[189] applications were filed seeking extension of the dead line fixed by the Court in its earlier order directing that the entire city bus fleet (Delhi) should be steadily converted to a single fuel mode of CNG by 31.3.2001.[190] The Court held :

> ...We are of the opinion that a blanket extension of dead line can not be given as that would amount to putting premium on the lapses and inaction of the administration and the private transport operators. Orders of this Court cannot be treated lightly. They are meant to be complied with in letter and in spirit...

The Court, however, in public interest gave extension till 30th September, 2001 in case of certain specified buses to mitigate the sufferings of the general public and particularly school children. The Court directed the transport department to ensure that there is no misuse or abuse of the given relaxations.

In *M.C. Mehta* v. *Union of India*,[191] the Court held that even after passing various orders regarding conversion of government / commercial vehicles to CNG, it is unfortunate that the efforts of governmental authorities have not

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189. AIR 2001 SC 1948.
190. *See* AIR 1998 SC 2963.
191. AIR 2002 SC 1696.

kept pace with the orders and under one pretext or the other, the NCT of Delhi and the Union of India have been seeking extension of time. The plea of the government that CNG is in short supply, and that it is unable to supply adequate quantity is incorrect, and this is clearly a deliberate attempt to frustrate the orders passed by the Court. Particulars filed in Court show that as of today no CNG is being imported. The indigenous produce is far in excess of what is supplied to the transport sector. There is no shortage of CNG so far as the transport sector is concerned. Moreover, there is no reason why CNG can not be imported so as to ensure less pollution. In these circumstances, the Court held :

> Even though the time for phasing out diesel buses had expired but in view of the situation created by the Government or not cooperating or complying with the Courts order, a different formula has to be worked out so as to cause as little inconvenience to the travelling public as possible, while at the same time punishing the wrong doer. Directions are, therefore, to be issued regarding the lifting of 1500 buses plus phasing out of 800 buses per month. The permits to be given are to be time bound and the continued operation of the diesel buses till they are replaced would require them to pay Rs. 500 per bus per day for 30 days of operation and thereafter Rs. 1000 per day and the same is to be deposited with the Director of Transport, Delhi.[192]

The application of the Union of India for further extension of time to run diesel buses was dismissed by the Court with costs of Rs. 20,000. The Court clarified that in our constitutional set up, orders and directions of the Court can not be nullified or modified or in any way altered by any administrative decision of the Central or the State Governments.

As regards this land-mark judgment, the newspaper reported that the Supreme Court on 5.4.2002 imposed an exemplary fine of Rs. 500 a day from February

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192. *Id.* at 1705.

1, 2002 on 8,000 diesel buses in Delhi for failing to convert to CNG. If the fines are added up, it means that transporters altogether will have to pay Rs. 25 crore. The diesel bus operators will have to pay a fine of Rs. 1000 for each day if they continue to ply after this judgment. The Court also criticised the Central Government for ignoring the common man's health and being more interested in protecting the 'health of the polluters'.[193]

However, whether the use of CNG will reduce the pollution level or not, has become a subject of debate. A study conducted by the Indian Institute of Technology (IIT) has revealed that CNG vehicles emit more carbon monoxide compared to 0.05 percent ultra low sulphur diesel (ULSD) run Euro II vehicles. Conversion to CNG reduces suspended particulate matter (SPM) emissions, but increases carbon monoxide emission from buses.[194] In fact, the Supreme Court also directed the Bhure Lal Committee to examine whether ULSD should be regarded as a clean fuel and buses be permitted to run on that.[195]

The Director General of Tata Energy Research Institute (TERI) believed ULSD to be a superior option compared to CNG. A truly fair comparison between CNG and an alternative would be with ULSD which, at 0.05 percent sulphur, is hundred times cleaner. TERI informed that 'many European countries, particularly those in Northern and Western Europe are already

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193. *S.C. slaps Rs. 25 crore fine on diesel buses*, by Times News Network, Times of India (New Delhi), dated 6.4.2002.

194. *CNG vehicles emit more carbon monoxide: Study*, by Our Energy Editor, Business Standard (New Delhi) dated 17.8.2001; *CNG hasn't been of help to bring down pollution: TERI*, Express News Service, Indian Express (New Delhi), dated 14.8.2001: CSE -India Green File, August 2001, No. 164 at 43,44.

195. *supra* note 189.

committed to ULSD. In the U.S., ULSD was introduced in late 1999 and has since achieved significant success as an alternative to CNG.[196]

In *M.C. Mehta* v. *Union of India*,[197] Shri D.S. Negi, Secretary (Environment), Government of Delhi pointed out that the population of Delhi which was about 17 lakhs in 1951 has gone upto more than 95 lakhs as per the 1991 census. In fact, more than 4 lakh people are being added to the population of Delhi every year out of which about 3 lakh are migrants. Delhi has been categorised as the fourth most polluted city in the world with respect to concentration of Suspended Particulate Matter (SPM) in the ambient atmosphere as per World Health Organisation Report, 1989. From NEERI's annual report (1991), it is obvious that the major contribution, so far as air pollution is concerned, is of the vehicular traffic but the industries in the city are also contributing about 30% of the air pollution.

The Supreme Court acting on the mandatory provisions of first Master Plan for Delhi, 1962 and second Master Plan, 2001; reports of Delhi Pollution Control Committee and CPCB; submissions of Secretary, Department of Urban Development, Government of India and Secretary (Environment), Government of Delhi, came to the conclusion that 168 listed industries being 'H' category (highly polluting) industries cannot be permitted to operate and function in Delhi. These industries may relocate / shift themselves to any other industrial estate in the NCR and should stop functioning and operating in the city of

196. Apratim Mukarji, *CNG Vs ultra sulphur diesel debate goes on,* Hindustan Times (New Delhi) dated 8.10.2001: CSE - India Green File, October 2001, No. 166 at 41.

197. AIR 1996 SC 2231. *See also* under the same title AIR 1996 SC 3311; AIR 2000 SC 2701; and AIR 2001 SC 1544.

Delhi with effect from November 30, 1996. The closure order with effect from November 30, 1996 shall be unconditional.

In *Pollution Control Board, Assam* v. *Mahabir Coke Industry*,[198] the Supreme Court ordered closure of 2 units of respondent Coke Industry for non-compliance with stipulated standard of suspended particulate matter. The Court, significantly, issued show-cause notices to the authorities of CPCB and Pollution Control Board, Assam for 'dereliction of their duties' in reporting that emission level of particulate matter from units of respondent industry conformed to the stipulated standard. The Court observed :

> Parliament has chosen to repose confidence in the authorities under the Pollution Control Board, so that human beings, who are to survive by breathing air while living in thickly-habituated places located near to industries, can have a reasonably healthy life. When such authorities themselves have shown *prima facie* such dereliction of their duties, they must be made answerable for it

However, the Court granted relief at some cost of ecology in cases involving developmental works of important nature. For example, in *M.C. Mehta* v. *Union of India, Re: Airports Authority of India Ltd.*,[199] the Supreme Court balanced the competing claims of running international airport in Capital of India and of preventing environmental pollution.

Airports Authority of India at the Indira Gandhi International Airport, New Delhi filed an application to install hot mix plants in the vicinity of IGI Airport for a period of one year for resurfacing of the runways for the safe landing and take-off of domestic and international aircrafts and for smooth handling of

198. (2000) 9 SCC 344.
199. (1999) 7 SCC 522.

aircraft traffic. It was indicated that due to constant use of these runways by ever increasing traffic, both domestic and international, cracks had developed in the runways which required immediate resurfacing, otherwise it might become impossible to receive and handle any aircraft traffic. The petitioner contended that in these extraordinary, exceptional and special circumstances, an exception be made in favour of the petitioner and the Honourable Court be pleased to permit the petitioner to set up hot mix plants within the vicinity of IGI Airport or at a nearby site. The petitioner further submitted that the hot mix plants shall operate only for a period of one year from the date of installation, shall be at least 2 kilometres away from the populated and residential areas, shall be fitted with pollution control devices of international standards and shall not emit pollutants beyond the limits prescribed by the CPCB. The Court held :

> Having regard to the facts set out in various affidavits filed before us.., we are of the view that the applicant has to be allowed to set up hot mix plants for resurfacing of the runways at IGI Airport, New Delhi. We have already allowed the setting up of hot mix plants and their operation for a period of three months to CPWD for repairing the Delhi roads...

The Court allowed the application of Airports Authority of India subject to following directions :

- Hot mix plants should be set up in the safe vicinity of IGI Airport at least at a distance of 3 km from a populated area.
- The company whose tender is accepted would ensure that the particulate matter emission does not exceed the prescribed limit of 150 mg.
- The vehicles on which the resurfacing material is transported should be loaded and unloaded in the presence of the security staff of IGI Airport

who should constantly escort these vehicles to rule out the possibility of any security risk.

- The hot mix plants should be operated for a period of one year from the date on which these are installed or till the resurfacing of the runways is done and completed, whichever is earlier.

However, here again, despite a specific legislation dealing with the problem in India and concern of the Court regarding prevention and control of air pollution, the situation is not satisfactory. Recent reports indicate a grim situation.

Experts say that air pollution in Mumbai now accounts for a mind blowing hike of 500 percent in cases of asthma and allergy. 'From a mere 1.5 percent in the 1970s, the incidence in Delhi has now jumped to 8 percent', says allergy specialist Pramod Niphadkar. Mumbai has an identical figure, according to a recent Bombay Hospital study. Mr. Pramod expressed his concern by saying that this is 'sadly the way we are "developing", with extensive use of auto-rickshaws and cars, carpeted and air conditioned premises. I am afraid, this will land us at par with the United States which has a whopping 12 percent incidence of asthma and allergies'.[200]

The Delhi Traffic Police joined hands with the NGO 'Better Breathers Club of India' (BBCI) to observe 'World Asthma Day' (WAD) and embarked on a continual programme of check-ups, diagnosis and treatment for traffic policemen with likely to contact respiratory and other ailments while performing duty at high-pollution traffic junctions.[201]

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200. Vithal C. Nadkarni, *Gas-trapped city wheezes and gasps,* Times of India (Bombay) dated 15.10.2000: CSE - India Green File, October 2000, No. 154 at 40,41.
201. Maxwell Pereira, *Protecting traffic policemen from the hazards of pollution,* Times of India (New Delhi) dated 11.05.2001: CSE - India Green File, May 2001, No. 161 at 45.

Of the 150 million asthma afflicted people worldwide, India accounts for nearly 50 million - "A Nation of Bad Lungs", as a national daily puts it. Genetic factors do influence the incidence of asthma, but adverse environmental conditions due to pollution also contribute to this growing malady. Of the three million premature deaths in the world due to outdoor and indoor air pollution, the highest number occurs in India.[202]

The worst affected age group of respiratory ailments is the one to four year. The report compiled by TERI indicates that the most number of deaths in Delhi have occurred in this age group since 1997. In 1989, deaths due to respiratory diseases in this age group accounted for seven percent, while in 1997, thirteen percent. This indicates that air pollution in the city has increased over a period of time. In fact the report states, 'increasing levels of air pollution are responsible for higher incidence rate of respiratory diseases, cancer and heart diseases in the city. Delhi's polluted air (both outdoor and indoor) is blamed for 40 percent of the emergency admissions of patients with breathing and heart complaints to hospitals'.[203]

In 1999, the High Court in response to a petition on vehicular pollution, ordered a better monitoring of pollution levels in Mumbai. However, the latest data shows an overall increase in air pollution levels in the city. Suspended particulate matter (SPM) has risen sharply at three of the five mobile monitoring units in the city. This rise has rendered Mumbai as the most polluted city in the country. The study places Mumbai at number one, Kolkata in the second and Delhi in the third position.[204]

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202. *Ibid.*
203. *Increase in respiratory ailments*, by Staff Reporter, New Delhi, The Pioneer (New Delhi) dated 20.06.2001: CSE - India Green File, June 2001, No. 162 at 95.
204 Vaishnavi C. Sekhar, *Mumbai smokes out Delhi, tops pollution chart*, Times of India (Bombay) dated 22.04.2001: CSE - India Green File, April 2001, No. 160 at 32.

However, according to another report, Delhi continues to remain the most polluted metropolis in the country, followed by Kolkata, Mumbai and Chennai. An earstwhile Minister of Environment and Forest informed the Lok Sabha that the level of sulphur dioxide in Delhi was recorded at 17 micrograms per cubic metre while the corresponding figure of Kolkata, Chennai and Mumbai were 14.0, 8.5 and 9.7 respectively. Oxides of nitrogen in Delhi stood at 31 micrograms per cubic metre and suspended particulate matter in the Capital city was recorded at 370 micrograms per cubic metre, the Minister said.[205]

Vehicular pollution in Delhi has risen from a mere 23 percent of the total air pollution to a staggering 72 percent now. 'Not a single pollution control decision has been taken by the Government. All have been thrust upon them by the judiciary', says CSE's (Centre for Science and Environment) air pollution control unit coordinator, Anoumita Roy Choudhury. 'Delhi will have to go on Euro III by April 2005', says CPCB chairman, Dilip Biswas. 'Even then we are short of global standards as Europe goes on Euro IV by April 2005', says Roy.[206]

According to a study conducted by TERI, the total vehicular pollution load in tons per day (tpd) in Delhi is as high as 1046.30 compared to 226.25 in Chennai, 293.71 in Kolkata and 659.30 in Mumbai.[207]

The data collected by the CPCB at the ITO crossing, Delhi on Diwali day in 1997 showed that the air, already quite bad, had become an even more noxious cocktail of harmful pollutants. Sulphur dioxide concentration which was about

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205. *Delhi is still most polluted*, Tribune News Service, New Delhi, November 26, Tribune (Chandigarh) dated 27.11.2001: CSE - India Green File, November 2001, No. 167 at 52, 53.
206. Shubhajit Roy, *One day campaigns can't clear maze of haze*, Times News Network, Times of India (New Delhi) dated 28.11.2001: CSE - India Green File, November 2001, No. 167 at 53.
207. *Vehicle pollution in Capital up 8%*, Tribune News Service, Tribune (Chandigarh) dated 02.01.20022: CSE - India Green File, January 2002, No. 169 at 48.

half the permissible level a day before Diwali went up to 1.5 times the permissible level. In other words, there was a three-fold increase of the noxious gas in the air. Total particulate matter level went up about 2.5 times, nitrogen dioxide about 2 times and carbon monoxide about 1.5 times.

Nobody really knows the health effects of this cocktail because scientists can tell us about the effects of individual pollutants but little about the effects of such a deadly cocktail. The high levels of sulphur dioxide are very worrying. The worst recorded episode of air pollution in the world was due to high sulphur dioxide pollution in the mid 1950s in London. Several hundred people died within a few days. The gas slowly turns into sulphate particles which are extremely tiny and, therefore, go very deep into the lungs and stay there for a long time. In addition, they are acidic and cause a lot of damage. WHO studies show that of all particles, sulphates are the worst. These particles also stay in the air for a long time [208]

According to the data collected by Madhya Pradesh Pollution Control Board, there has been an alarming increase in the suspended particulate matter (SPM) level in the air which reached 700 micro grams per cubic metre against the standard 200 micro grams level in the residential areas during the Diwali festival in Bhopal. The sulphur dioxide level reached 67 micro grams per cubic metre and the level of oxides of nitrogen reached 40 micro grams per cubic metre. The level of sulphur dioxide ranges from 30 to 35 micro grams under

208. Anil Agarwal, *Killing me softly with her smog,* Times of India (New Delhi) dated 23.10.2000: CSE - India Green File, October 2000, No. 154 at 43.

normal circumstances, while the level of oxides of nitrogen ranges from 25 to 30 micro grams in the city under normal days [209]

The 'Garden City' (Bangalore) is also witnessing increasing levels of air pollution. The city is now competing with Chennai for the third position, Calcutta and Mumbai being on the top. Government vehicles including Karnataka Road Transport Corporation (KSRTC) buses, Bangalore Metropolitan Transport Corporation (BMTC), Regional Transport Office and Police department vehicles contribute to 15 percent of the total air pollution Lack of proper maintenance of government vehicles, use of old vehicles, sale of adulterated fuel and lack of coordination among officials of transport and police departments and SPCB are some of the causes of this worsening situation [210]

Studies have revealed that the levels of pollutants at the traffic intersections in Bangalore was between 30 and 40 ppm (parts per million) as against the permissible level of 8 ppm, former Environment Secretary, A N Yellappa Reddy reported [211]

In Calcutta, seven tons of particulate material is released by the chimneys of small factories A recent SPCB sponsored survey has revealed that Calcutta is the "only megacity" in the country which allows small industries with coal-fired boilers. It has identified about 10,000 industrial units in the city with a turnover

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209. Anurag Joshi, *SPM level in air alarming*, Bhopal, Nov. 16,Central Chronicle (Bhopal) dated 17.11.2001: *supra* note 205, at 49.
210. Ramu Patil, *Most polluted: Bangalore competes with Chennai*, Indian Express (New Delhi) dated 22.10.2000: *supra* note 200, at 44.
211. *Eco laws have not been implemented*, Bangalore, June 5 (DHNS), Deccan Herald (Bangalore) dated 06.06.2001: *supra* note 203, at 3,4.

of more than Rs. 5000. They contribute nearly 30 percent of the particulate matter in the atmosphere by burning about 85 tons of coal.

The State Government has now directed the units to shift from solid to liquid fuel to fire their boilers. 'Once this is done, the small units will emit a mere .14 tonnes of particulate matter into the atmosphere daily', a SPCB engineer said. 'The Government is thinking in terms of extending a 50 percent subsidy for the units to upgrade the boilers, upto a maximum of Rs. 5 lakhs', a senior SPCB official said.[212]

A pollution haze of size five times more than India, that has the potential to change the climatic pattern in the subcontinent drastically, has been discovered by an international team comprising scientists from India, USA and Europe. Dr. A.P. Mitra, former director general of Council of Scientific and Industrial Research (CSIR) told reporters that the thick and extensive haze layer, extending over some ten million square kilometre over northern Indian Ocean and southern part of the country, can affect the monsoon cycle and consequently overall climate and may have an adverse impact on marine life. It may affect agricultural productivity by 10-30 percent and have a deleterious impact on human and animal health too.[213]

The layer contains an appreciable amount of soot carbon showing that air pollution has more than local implications. Burning of fossil fuel and biomass, emission from automobile and aircraft and forest fire contributed significantly in

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212. Kunal Sengupta, *Crackdown call on coal-fired units*, Telegraph (Calcutta) dated 23.02.2001. : CSE - India Green File, February 2001, No. 158 at 39.

213. *10-million sq km pollution haze over Indian Ocean*, D.H. News Service, Deccan Herald (Bangalore) dated 17.10.2000: *supra* note 200, at 41.

the formation of haze. Scientists indicate that it may have as grave an impact as green house gases on global climate [214]

Home heating and cooking fires in India and south-east Asia based on wood, dung and farming wastes, pump tons of pollution into air, a study shows Researchers found that although Europe and North America still lead the world in per capita release of carbon dioxide into the atmosphere, Asia is catching up The nature of pollution differs Instead of fossil fuels as the major source of pollution, as is the case in Europe and North America, much of the pollution from India and South-east Asia comes from biofuels like firewood, animal dung and agricultural wastes, such as straw Pollution from such fuels causes greater carbon monoxide concentration in the atmosphere, the study found [215]

An estimated 5.9 lakh Indians die each year from indoor air pollution, possibly the biggest danger being the use of traditional fuel in villages Air pollution kills an estimated 84,000 people each year. India is spending about Rs. 4,600 crore a year to make up for health damages caused solely by air pollution [216] According to an estimate by the World Bank study using 1992 data, the annual health cost to India was upto about Rs 5,550 crore to combat air pollution Out of this, the health cost of air pollution in Delhi alone was found to be about Rs 1000 crore.[217]

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214 *Ibid*

215. *Pollution staining Indian Ocean atmosphere*, Associated Press, Washington, Feb. 9, Central Chronicle (Bhopal) dated 10.02.2001: *supra* note 212, at 17.

216. *The air we breathe, the water we drink...*, The Times of India News Service, Times of India (New Delhi) dated 01.01.2001: CSE - India Green File, January 2001, No. 157 at 34.

217. *supra* note 191, at 1700.

The increase in respiratory diseases specially amongst the children should normally be a cause of concern for any responsible government. The precautionary principle enshrined in the concept of sustainable development would have expected the government and the health authorities to take appropriate action and arrest air pollution... It is due to the lack of proper concern on the part of the governmental authorities that people are suffering from respiratory and other diseases. The Bhopal gas tragedy was a one time event which, hopefully, will not be repeated, but here, with not enough concern or action being undertaken by the Union of India, far greater tragedies in the form of degradation of public health are taking place every day.[218]

However, environment and development are not always opposed to each other. Rather, they are complementary to each other. Advancements in science and technology may benefit the environment also. For example, the Government has finally decided to introduce gasohol as an alternative clean automobile fuel in a big way. Gasohol is a blend of ethanol and petrol. Ethanol is extracted from molasses, and the use of gasohol is expected to be a boon to the sugarcane farmers and a value addition to the molasses industry.[219]

Vehicles using conventional petrol emanate toxic gas like carbon monoxide as auto emissions because of unburnt hydrocarbons. Doping of ethanol with petrol supplies extra oxygen required for the complete combustion in the engine and, therefore, results in considerable reduction of carbon monoxide in auto emissions. As per Bureau of Indian Standards, upto five percent doping of

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218. *Ibid.*

219. *Launch of sugarcane-based gasohol autofuel okayed,* Our Energy Editor, New Delhi, 20 May, Business Standard (New Delhi) dated 21.05.2001: *supra* note 201, at 97.

petrol is allowed. Currently, about 60 lakh tons (85 lakh kilo litre approx.) of petrol is consumed in the country every year. The Government has already set up three pilot projects two in Maharashtra and one in U.P., for the production of gasohol [220]

Thus, air is the most vital component of biosphere without which no living organism can survive. Polluted air causes serious problems not only for the human beings, animals and plants but also inanimates. Domestic fire and incineration, vehicular emissions and release of toxic substances from industries are the major sources of air pollution Air Act is a comprehensive legislation which contains important provisions for the control of air pollution Contravention of the provisions may be visited with criminal liability. The attitude of the courts has also been very positive to enforce the provisions of the Act in spirit. However, independent functioning of the enforcement agencies without any political interference and vested pecuniary interests is necessary to ensure effective implementation An aware and informed citizen, like Mr M C Mehta, can also play a lead role in curbing the menace of air pollution

5.5 The Environment (Protection) Act, 1986

> Industrial growth, yes, but by exposing a large segment of society to the risk of losing lives, no. This apprehension is not imaginary. Bhopal disaster brought to the knowledge of all what a tragedy can be caused by chemical industries...[221]

In the wake of Bhopal Gas Tragedy, the Government of India enacted the Environment (Protection) Act, 1986[222] (hereinafter to be referred to as 'EPA'

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220. *Ibid.*
221. *F.B. Taraporawala* v *Bayer India Ltd.*, (1996) 6 SCC 58: AIR 1997 SC 1846.
222. Act No. 29 of 1986.

or 'the Act') under Article 253 of the Constitution to implement the decisions taken at the United Nations Conference on Human Environment held at Stockholm in June, 1972.The purpose of the Act as set out in the Preamble is 'the protection and improvement of environment and matters connected therewith and the prevention of hazards to human beings, other living creatures, plants and property'.

The scope of EPA is wider than the previous legislations, namely, Water Act, 1974 and Air Act, 1981. Water Act and Air Act deal with the prevention and control of specific types of pollution while EPA is aimed at not only prevention and control of pollution in general, but also the protection and improvement of environment. Water Act and Air Act entrust the task of prevention and control of pollution on agencies created under the statutes, namely, Central and State Pollution Control Boards while EPA confers wide powers on the Central Government. The Act has 26 Sections divided into four chapters and extends to the whole of India.

Under EPA, 'environment' is defined to include water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property'.[223] 'Environmental pollution' means 'the presence in the environment of any environmental pollutant'.[224] 'Environmental pollutant' means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be injurious to environment'.[225] 'Hazardous substance' means any substance or

223. Section 2(a).
224. Section 2(c).
225. Section 2(b).

preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organism, property or the environment.[226]

A Meeting of Experts to consider the ways in which the EPA may be effectively implemented was convened by the Consumer Education and Research Centre (CERC) and the Indian Law Institute (ILI) on August 22-24, 1986. The Meeting of Experts welcomed the definition of 'environment' holding that the definition is inclusive, not exhaustive. However, it noted that EPA itself focuses on environmental pollution and hazardous substances and processes, which are, or tend to be, injurious to environment. This would indicate that major threats to environment, other than those covered by the EPA, lie outside regulation and legislation e.g. adverse environmental impact of large irrigation programmes, soil degradation and erosion, flood and drought and anti-desertification. Clearly, a more wide focus is needed, given the entirely justified comprehensive notion of 'environment' under the EPA.[227]

As regards the definitions of 'environmental pollutant', 'environmental pollution' and 'hazardous substance', the Meeting of Experts noted that these definitions are exhaustive, not inclusive. In other words, the meanings are determined and fixed by the Act. The Meeting recommended that the word "means" be substituted by the word "includes". An inclusive definition will have distinct advantage for the exercise of vast rule-making powers under the Act and for a more effective enforcement of the Act. Exhaustive definitions, in

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226. Section 2(e).
227. *The concept of environment in the EPA*. The Indian Law Institute, Edition, 5 (1987).

an evolving field like environmental control, are likely to lead to recourse to judicial interpretation of highly complex scientific and technological matters, whose complexion is ever changing as knowledge accumulates dynamically.[228]

In the definition of 'environmental pollutant' and 'hazardous substance' at first sight, it may appear that a "pollutant" is different from a "substance". An environmental pollutant need not be a hazardous substance, as defined. The latter may include radioactive substance or preparation; the former may or may not, depending on the interpretation which may eventually be placed on the definition of "pollutant" and distinct from "substance". The Meeting recommended that even if these expressions are to be retained, the words "in any form" be suitably added to subsections (b) and (e) to provide for more effective administration of the Act. Perhaps, the same result can be achieved by making these definitions inclusive.[229]

The Act empowers the Central Government to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of environment and preventing, controlling and abating environmental pollution.[230] The measures include:[231]

- co-ordination of actions by the state governments, officers and other authorities;
- planning and execution of a nation-wide programme;

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228. *The concept of "Hazardous Substance" and "Environmental Pollutant" under the 1986 Act*, The Indian Law Institute, Edition, 6 (1987).
229. *Id.* at 6, 7.
230. Section 3(1).
231. Section 3(2).

- laying down standards for the quality of environment and for emission or discharge of pollutants;
- restricting areas of industrial operations;
- laying down procedures and safeguards for the prevention of accidents and remedial measures for such accidents;
- laying down procedures and safeguards for the handling of hazardous substances;
- examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;
- carrying out and sponsoring investigations and research;
- inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving directions to authorities, officers or persons;
- establishment or recognition of environmental laboratories;
- collection and dissemination of information and preparation of manuals, codes or guides;
- such other matters as the Central Government deems necessary or expedient for effective implementation of the Act.

The Central Government may also constitute an authority or authorities[232] and may appoint officers[233] for the purpose of exercising and performing powers and functions under the Act. EPA is the first environmental statute to confer authority on the Central Government to issue direct written orders to any person, officer or authority including orders to close, prohibit, or regulate any

232. Section 3(3).
233. Section 4.

industry, operation or process or to stop or regulate the supply of electricity, water or any other service.[234]

The Central Government may, by notification in the Official Gazette, make rules in respect of the matters referred to in Section 3.[235]

EPA prohibits the discharge of environmental pollutants in excess of prescribed standards.[236] Hazardous substances are to be handled in accordance with the prescribed procedure and safeguards.[237] In case any accident or other unforeseen act or event occurs or is apprehended to occur, the person responsible is bound to prevent or mitigate it and he has also to intimate and render all assistance to prescribed authorities or agencies so that remedial measures may be taken. The expenses incurred by the authority or agency may be recovered from the person concerned as arrears of land revenue or of public demand.[238]

Any person empowered by the Central Government shall have a right to enter any place for the purpose of ensuring that provisions of the Act are being complied with. He may search any building and seize any equipment, industrial plant, record, register, document or other material object as per the provisions of the Code of Criminal Procedure, 1973. If a person, without any reasonable cause or excuse, fails to render all assistance or wilfully delays or obstructs any

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234. Section 5.
235. *See* The Environment (Protection) Rules, 1986, vide S.O. 844(E) dated the 19th November, 1986 as amended from time to time. The Department of Environment, Forests and Wildlife of the Central MoEF has been entrusted with the task of making rules for effective implementation of the Act.
236. Section 7.
237. Section 8.
238. Section 9.

person empowered by the Central Government, he is guilty of an offence under the Act.[239]

The Central Government or any officer empowered by it has power to take samples of air, water, soil or other substance for analysis.[240] The sample so taken has to be sent to the environmental laboratory[241] for analysis by the Government analyst.[242] However, the result of analysis of a sample is not admissible in evidence in any legal proceeding unless the prescribed procedure is complied with.[243]

The Act prescribes stiff penalties for offences under the Act. Whoever fails to comply with or contravenes any of the provisions of the Act, or the rules made or orders or directions issued thereunder shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years or with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with an additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention. If the failure or contravention continues beyond a period of one year after the date of conviction, the offender is punishable with imprisonment for a term which may extend to seven years.[244] However, there is no provision for a minimum mandatory punishment.

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239. Section 10.
240. Section 11(1).
241. Established or recognised under Section 12.
242. Appointed or recognised under Section 13.
243. Section 11(2). The procedure is provided under sub-sections (3) and (4) of Section 11.
244. Section 15.

If an offence under the Act is committed by a company, every person who is incharge of and is responsible to the company for the conduct of its business is deemed to be guilty of the offence.[245] Similarly, if an offence is committed by any department of government, the Head of the Department is deemed to be guilty of the offence and punished accordingly.[246] However, they may be exonerated from liability if it can be proved that the offence was committed without their knowledge or that they exercised all due deligence to prevent the commission of such offence. For offence by any department of government, the creation of liability of its Head is indeed a very singular innovation (despite the proviso). Usually, the administration is not thus made accountable. The Meeting of Experts welcomed this innovative provision.[247]

So far as criminal sanctions are concerned, on the one hand, the Act provides for deterrent punishment and on the other hand, it makes a strange provision.[248] According to this controversial provision, where an offence under EPA is also an offence under any other Act, the offender is to be punished only under the other Act. There are environmental legislations covering almost every aspect of environmental protection. Prevention and control of noise pollution is without any specific legislation, but it is regulated under law of torts or criminal law. So, practically there is hardly any instance for the operation of penal provisions under EPA. This has led the critics to make interesting observations like the Act is a toothless tiger or the Act is a cobra that is seemingly fierce but has no venom in its fangs.

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245. Section 16.
246. Section 17.
247. *Management of Sanctions in the EPA*, The Indian Law Institute, Edition, 42 (1987).
248. Section 24.

Prior to the enactment of EPA, the power to prosecute environmental offenders belonged to the government. Common man had no locus standi. EPA gives 'any person' in addition to authorised government officials, the right to make a complaint to the court alleging an offence under the Act. For this, the person has to give a notice of not less than sixty days to the government of his intention to make a complaint.[249] Subsequently, similar provisions were incorporated in the Water Act and Air Act also.

EPA protects the officers and employees of the government or any authority constituted under the Act from prosecution or other legal proceedings for the acts done or intended to be done in good faith.[250] It empowers the Central Government to require any person, officer, State Government or other authority to furnish information, reports or returns etc.[251] The Central Government may delegate all or any of its powers under the Act to any officer, State Government or authority.[252] EPA also bars the jurisdiction of the Civil Court in respect of anything done or action taken under the Act in good-faith.[253]

So far as the judicial attitude towards implementation of the provisions of EPA is concerned a few examples of the decisions of the courts will suffice. In *State of H.P.* v. *Ganesh Wood Products*,[254] while interpreting Sections 3 and 6 of the Act, the Court observed:

> These provisions establish and emphasise the power of the Central Government to regulate the location of industries which

249. Section 19.
250. Section 18.
251. Section 20.
252. Section 23.
253. Section 22.
254. (1995) 6 SCC 363.

> also includes the power to prohibit their establishment as well Having regard to the objectives underlying the Act and the alarming diminution of forest cover in the country, the said provisions should be understood not so much as conferring powers on the Central Government but as creating an obligation upon it to exercise those powers for achieving the objectives underlying the Act

In *Vellore citizens Welfare Forum* v. *Union of India*,[255] the Supreme Court while dealing with the matter relating to tanneries operating in five districts of Tamil Nadu, highlighted the relevance of Sections 3, 4, 5, 7 and 8 of EPA and Rules 3(1), 3(2) and 5(1) of the Environment (Protection) Rules, 1986 and observed

> Environment Act contains useful provisions for controlling pollution It is, therefore, necessary for this Court to direct the Central Government to take immediate action under the provisions of the Environment Act

In *Indian Council for Enviro-Legal Action* v *Union of India*,[256] the Supreme Court dealt with a matter relating to chemical industries in village Bichhri in Udaipur (Rajasthan) It was alleged that these industries were spreading diseases, death and disaster in the village and the surrounding areas The Court held

> Section 3 of the EPA, 1986 expressly empowers the Central Government (or its delegate, as the case may be) to 'take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of environment ' Section 5 clothes the Central Government (or its delegate) with the power to issue directions for achieving the objects of the Act Read with the wide definition of 'environment' in Section 2(a), Sections 3 and 5 clothe the Central Government with all such powers as are 'necessary or expedient for the purpose of protecting and improving the quality of the environment' The Central Government is

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255 AIR 1996 SC 2715
256 (1996)3 SCC 212

> empowered to take all measures and issue all such directions as are called for the above purpose....[257]

In *M.C. Mehta* v. *Union of India*,[258] the Supreme Court observed :

> Even a cursory perusal of the provisions of the enactment reveal the emphasis on the need for not mere protection but also improvement of the environmental quality. The definitions including that of 'environment' in Section 2 of the Act, the extent of the powers of the Central Government in Section 3 and the further power to give directions in Section 5 are alone sufficient to indicate the high degree of duty imposed on the State for which large powers are given to enable discharge of that duty... It is undoubtedly a matter of universal concern that the quality of the environment continues to deteriorate even now. Any further delay in the performance of its duty by the Central Government can not, therefore, be permitted.

Regarding the creation of an authority or authorities under Section 3(3) of EPA, the decisions of the apex Court are self-speaking. In *Vellore Citizens Welfare Forum's case*,[259] the Supreme Court observed :

> The main purpose of the Act is to create an authority or authorities under Section 3(3) of the Act with adequate powers to control pollution and protect the environment. It is a pity that till date no authority has been constituted by the Central Government. The work which is required to be done by an authority in terms of Section 3(3) read with other provisions of the Act is being done by this Court and the other courts in the country. It is high time that the Central Government realises its responsibility and statutory duty to protect the degrading environment in the country....

The Supreme Court, in this case, even suggested the constitution of the authority by proposing that it should be headed by a retired Judge of the High Court and it may have other members, preferably with expertise in the field of pollution control and environmental protection.

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257. *Id.* at 243.
258. (1998) 9 SCC 589.
259. *supra* note 255. *See also Bittu Sehgal* v. *Union of India*, (2001) 9 SCC 181.

In *F.B. Taraporawala*,[260] while dealing with the matter of relocation of chemical industries located in populated areas in Thane, Mumbai. the Supreme Court observed :

> ... It has been felt by us that we have neither the expertise nor are we in possession of various information, which shall be required to decide one way or the other so far as the question of relocation is concerned. In such a situation what has appealed to us is to leave this matter to be examined by an authority which we would require the Central Government to constitute, as visualised by Section 3(3) of the Environment (Protection) Act, 1986... We, therefore, direct the constitution of an authority under Section 3(3) of the Act by the Central Government, who shall confer all the necessary powers under the Act on the authority, which shall be constituted within one month from the receipt of this order. The authority shall submit its report to the Central Government within three months after examining and deciding all the relevant issues including those mentioned by us. This would be done by affording reasonable opportunity of hearing to the parties concerned. Follow-up actions shall be taken by all concerned as per the recommendations of the authority within reasonable time.

The Central Government vide Notification S.O. 93(E) dated 29.1.1998 constituted the Environment Pollution (Prevention and Control) Authority for the National Capital Region (NCR). The Authority is headed by Shri Bhure Lal, Secretary to the Government of India with three other members and Chairman, CPCB as the Convenor.[261] The Authority is empowered to exercise powers under Section 5 of the EPA for issuing directions for compliance relating to violation of standards for quality of environment, emission or discharge of pollutants and to take all necessary steps to control vehicular pollution, restriction of industries causing environmental pollution and monitor the progress of action plan drawn up by the MoEF on pollution in Delhi. The

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260. *supra* note 221.

261. *Members of the Authority*: (1) Shri Bhure Lal; (2) Shri D.K. Biswas, Chairman, Central Pollution Control Board; (3) Shri Anil Aggarwal; (4) Shri Jagdish Khattar; and (5) Smt. Kiran Dhingra.

tenure of the Authority has now been extended upto January, 2006 with inclusion of two additional members.

In *M.C. Mehta* v. *Union of India*,[262] the Supreme Court approved the constitution of the Committee headed by Shri Bhure Lal as an Authority under Section 3(3) of the EPA to be known as the Environment Pollution (Prevention and Control) Authority for the NCR to deal with the entire matter relating to environmental pollution. The Court observed that 'we are satisfied that this step being taken by the Government is appropriate and timely'.

In *T.N. Godavarman Thirumulpad* v. *Union of India*,[263] while dealing with a public interest litigation concerning large-scale deforestation in the State of Arunachal Pradesh, the Supreme Court held :

> The Central Government has, in exercise of the powers conferred by sub-section (3) of Section 3 of the Environment (Protection) Act, 1986, constituted an authority to be known as Arunachal Pradesh Forest Protection Authority... It, therefore, now appears appropriate for us to refer all pending interim applications, seeking various directions in so far as the State of Arunachal Pradesh is concerned to the said Authority. It shall also be open to any party, whose application is not pending before us, who wishes to seek some directions in the matter, to approach the Authority directly. The Authority shall consider the applications, both, referred by this Court and filed directly before it, and give appropriate directions, *subject, however, to the condition that no direction, which is inconsistent with any of the orders or directions made by this Court, shall be made*...With a view to enable the Authority... to function effectively and discharge its duties properly, we expect all the parties, including the State Government and the Forest Corporation, to extend their full and proper cooperation to it.

The apex Court has been continuously monitoring the constitution of authority established under the Act. For example, in *Indian Council for Enviro-Legal*

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262. (1998) 2 SCC 435.

263. (1999) 9 SCC 216. For constitution of authorities for other states, *see T.N. Godavarman Thirumulpad* v. *Union of India*, (1999) 9 SCC 151.

Action v. *Union of India*,[264] the Supreme Court objected to the induction of three persons from the State of Maharashtra, though not specialists, in the National Costal Management Authority which was set up by the Government of India in pursuance of the judgment of the Court in *Indian Council for Enviro-Legal Action* v. *Union of India*.[265] The Court held :

> One from the State of Maharashtra is understandable, but why the other two persons have been inducted in the national authority is not understandable, as in their place some other States could have been represented. The learned Additional Solicitor General shall obtain instructions within two weeks as to whether it would be possible to induct people from other coastal States in the national authority in place of at least two persons from the State of Maharashtra

The analysis of the key provisions of the Act reveals that the enactment of EPA, wide in scope, is certainly a bold step of the Government so far as prevention and control of environmental pollution is concerned. However, there is excessive centralisation of power in the hands of Central Government Even the authority or authorities constituted under the Act are subject to supervision and control of Central Government. Since the authorities are constituted for the basic purpose of implementing the provisions of the Act, they should be given a more free hand.

The penalties, particularly fines, for violation of the provisions of the Act are stringent, but in case of big industries, these fines, as compared to the cost of compliance of environmental standards, are negligible. A penalty equivalent to the amount saved in not installing the treatment plants should be imposed. Moreover, there will be no liability if a person proves that the offence was

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264. (2000) 2 SCC 293.
265. (1996) 5 SCC 281.

committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence. Because of this technicality, anyone may evade the responsibility easily.

The right of 'any person' to prosecute offenders has been incorporated under the Act but for that he is required to give a notice of not less than 60 days to the Government of his intention to make a complaint to the court. He can go to the court only if the Government does not act on the notice during this period. There are at least two disadvantages of this rule. One, immediate remedial action can not be taken. Second, this period of sixty days can be utilised by the offender in destroying the evidence of the offence.

5.6 National Environment Appellate Authority Act, 1997

The National Environment Appellate Authority Act, 1997[266] (hereinafter called NEAA) came into force on 30th January, 1997. It provides for the establishment of a National Environment Appellate Authority by the Central Government to hear appeals with respect to restriction of areas in which any industry, operation or process is not carried out or is carried out subject to certain safeguards under the EPA. It consists of a Chairperson, a Vice-Chairperson and not more than three members.

5.6.1 *Qualifications for appointment*[267]

(i) *Chairperson*:

a. should have been a Judge of the Supreme Court, or

b. the Chief Justice of a High Court.

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266. Act No. 22 of 1997.
267. Section 5.

(ii) *Vice-Chairperson*:

a. should have held the post of a Secretary to the Government of India or an equivalent post under Central or State Government for at least two years; and

b. should have expertise or experience in administrative, legal, managerial or technical aspects of environment.

(iii) *Member*:

Should have professional knowledge or practical experience in the areas of conservation, environmental management, law or planning and development.

All the above mentioned officials of the Authority are appointed by the President for a term of three years extendable to another term of three years or until the Chairperson attains the age of seventy years and Vice-Chairperson or Member, the age of sixty five years, whichever is earlier.[268] Their salaries, allowances and other terms and conditions of service are prescribed by the Central Government.[269] In case of death, resignation, absence or illness of the Chairperson, Vice-Chairperson acts on his behalf.[270] The officials of the Authority may be removed from office by the President on the ground of proved misbehaviour or incapacity after an inquiry made by a Judge of the Supreme Court and giving them a reasonable opportunity of being heard.[271]

Any person, association of persons, Central Government, State Government or any local authority, aggrieved by the order granting environmental clearance, may prefer an appeal to the Authority, in such form as may be prescribed, within thirty days (extendable to not more than ninety days) from the date of

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268. Section 7.
269. Section 9.
270. Section 6.
271. Section 8.

such order. The Authority is required to dispose of the appeal within ninety days (extendable to a further period of thirty days).[272]

Although the Authority has the same powers as are vested in a Civil Court it is not bound by the procedure laid down under the Code of Civil Procedure, 1908 and is only to be guided by the principles of natural justice.[273]

The Authority is equipped with sufficient staff.[274] The Chairperson exercises financial and administrative powers which he may delegate to any other officer of the Authority.[275]

After its establishment, no Civil Court or other authority may entertain any appeal in respect of any matter falling within the jurisdiction of the Authority.[276] Its proceedings are considered judicial proceedings within the meaning of Sections 193, 219 and 228 of the Indian Penal Code, 1860 and office bearers are deemed to be public servants within the meaning of Section 21 of that Code.[277] No suit, prosecution or other legal proceeding can lie against them for anything done in good-faith.[278]

Whoever fails to comply with any order of the Authority is punished with imprisonment for a term which may extend to seven years, or with fine which may extend to one lakh rupees, or with both.[279] There is corporate liability with the exemption in favour of a person proving lack of knowledge or exercising all due diligence to prevent the commission of offence.[280]

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272. Section 11.
273. Section 12.
274. Section 14.
275. Section 13.
276. Section 15.
277. Sections 16, 17.
278. Section 18.
279. Section 19.
280. Section 20.

For the purpose of removing any difficulty in the enforcement of the Act, the Central Government was empowered to make any provision / order within three years from the date on which the Act received the assent of the President.[281] The Central Government has been empowered to make rules[282] for carrying out the provisions of the Act but every rule so made should be laid, as soon as possible, before each House of Parliament for approval.[283]

In *A.P. Pollution Control Board* v. *Prof. M.V. Nayudu (Retd.)*,[284] the question was whether the Supreme Court while dealing with environmental matters under Article 32 or Article 136 or High Courts under Article 226 can make reference to the National Environmental Appellate Authority established under the Act of 1997 for investigation and opinion

Answering in the affirmative, the Supreme Court referred the following questions to be decided by the Authority, 'so far as possible within three months'

- Is the respondent-industry a hazardous one and what is its pollution potentiality, taking into account the nature of the product, the effluents and its location?
- Whether the operation of the industry is likely to result in pollution of the Himayat Sagar and Osman Sagar lakes supplying drinking water to the twin cities of Hyderabad and Secunderabad?

The Supreme Court, in this innovative and land mark judgment, observed that environmental concerns arising in the Supreme Court or in the High Courts are of equal importance as human rights concerns. Both are to be traced from

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281. Section 21.
282. *See* National Environment Appellate Authority (Appeal) Rules, 1997; *see also* National Environment Appellate Authority (Financial and Administrative Powers) Rules, 1998
283. Section 22.
284. (1999) 2 SCC 718. *See also A P. Pollution Control Board II* v *Prof M V Nayudu (Retd)*, (2001) 2 SCC 62

Article 21 which deals with the fundamental right to life and liberty. While environmental aspects concerns "life", human rights aspects concern "liberty". In the context of emerging jurisprudence relating to environmental matters, as is the case in matters relating to human rights, it is the duty of the Supreme Court to render justice by taking all aspects into consideration. The Court held that it 'can refer scientific and technical aspects for investigation and opinion to expert bodies such as the appellate authority under the NEAA, 1997'.

The Supreme Court approved the constitution of the Appellate Authority established under NEAA and held:

> ...it comes very near to the ideals set by this Court. Under that statute, the appellate authority is to consist of a sitting or retired Supreme Court Judge or a sitting or retired Chief Justice of a High Court and a Vice-Chairperson who has been an administrator of high rank with expertise in technical aspects of problems relating to the environment; and technical members, not exceeding three, who have professional knowledge or practical experience in the areas pertaining to conservation, environmental management, land or planning and development.[285]

5.7 Control of Noise Pollution

> No right in an organized society can be absolute. Enjoyment of one's rights must be consistent with the enjoyment of rights also by others. Where in a free play of social forces it is not possible to bring about a voluntary harmony, the State has to step in to set right the imbalance between competing interests....[286]

'Noise' – a slow agent of death and one of the new killers – is the product of modern age. With the development of science and technology and high speed means of transport, the problem of noise pollution has assumed multifarious dimensions. It has now become a serious threat to the fundamental right to life

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285. *Id.* at 738.
286. *Narendra Prasadji Anand Prasadji Maharaj* v. *State of Gujarat*, (1975) 1 SCC 11, 20.

and personal liberty of an individual. It has the potential of disturbing him not only during normal working hours but also during night sleep. Noise has been recognised as a potentially harmful pollutant and a great nuisance these days, without the prevention and control of which, the enjoyment of life with all human dignity is not possible, specially in urban areas.

'Noise' and 'sound' are two different things. When the effects of sound become undesirable, it is noise. A sound may be noise if it causes disturbance. Derived from the Latin word 'nausea', noise has been defined as unwanted or undesirable sound. It is a mixture of many tones combined in a non-musical manner. It is an unwanted sound that produces unwanted effects, a sound without value. It has also been defined as one or a group of loud, harsh, non-harmonious sounds or vibrations that are unpleasant and irritating. Legally it may be defined as an excessive, offensive, persistent or startling sound.[287]

However, it is not possible to give a precise and exact definition of the word 'noise'. It involves the inter play of psychology of the individual. It is a factor that varies from person to person, place to place, time to time, society to society, function to function and from source to source. What may be good music for one person may annoy another.

Noise pollution is 'unwanted sound which gets dumped into the atmosphere without regarding to the adverse effects it may be having'.[288] Like water, soil or air pollution, noise pollution is equally hazardous for the health of human beings, animals and birds. Besides mills and industries using big machines of

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287. These definitions have been borrowed by the author from relevant sources.
288. DAVID HUGES, ENVIRONMENTAL LAW, 311(Butterworth, London, 1986).

high speed, the major sources of noise pollution are the use of loudspeakers in religious, musical or political meetings; automobiles; fast trains; air crafts specially supersonic; demolition, construction and expansion in urban areas; satellite programmes; televisions and radios etc.

In *Church of God (Full Gospel) in India* v. *K.K.R. Majestic Colony Welfare Association*,[289] the Supreme Court observed:

> In these days, the problem of noise pollution has become serious with the increasing trends towards industrialization, urbanization and modernization and is having many evil effects including danger to health. It may cause interruption of sleep, affect communication, loss of efficiency, hearing loss or deafness, high blood pressure, depression, irritability, fatigue, gastrointestinal problems, allergy, distraction, mental stress and annoyance etc. This also affects animals alike. The extent of damage depends upon the duration and the intensity of noise. Sometimes it heads to serious law and order problem. Further, in an organized society, rights are related with duties towards others including neighbours.

The Court also referred to an article in the August 1982 issue of Science Today containing a study on Noise Pollution in South India wherein it is pointed out that noise pollution leads to serious nervous disorders, emotional tension leading to high blood pressure, cardiovascular diseases, increase in cholesterol level resulting in heart attacks and strokes and even damage to the foetus.

A decibel (dB) is the standard unit for measuring noise. 30 dB is the whispering range, 50-55 dB may delay or interfere with sleep, 60 dB is the level of normal talk, 90-95 dB may cause changes in the nervous system and 150-160 dB may prove fatal. Various countries have fixed the maximum decibel limits by enacting laws in this respect. Developed countries of the world like USA, UK and Japan realised the extent of the problem of noise pollution much earlier and

289. AIR (2000) SC 2773.

enacted specific laws to that effect In USA, there are Noise Pollution and Abatement Act, 1970, Federal Environmental Policy and Noise Control Act, 1972, New York City Noise Control Code, 1972, Chicago Noise Control Regulations, 1971, and Connecticut Highway Noise Control Act, 1971 In UK, there are Noise Abatement Act, 1960 and Part III of the Control of Pollution Act, 1974. In Japan, there is Japanese Noise Regulation, 1968 These laws are effectively working In USA, noise is ranked second to crime as an evil

In India there is no specific Act dealing with the problem of noise pollution It may be regulated on the basis of motley provisions of the Constitution of India dealing generally with the protection and improvement of environment, law of nuisance under Torts, public nuisance under Indian Penal Code, 1860 and Code of Criminal Procedure, 1973, provisions relating to control of 'horns' and 'silencers' under Motor Vehicles Act, 1988, Factories Act, 1948, Police Act, 1861, Workmen's Compensation Act, 1923 and Air Craft Act, 1934

So far as specific laws relating to environment in India are concerned, 'noise' has been identified as a pollutant and included in the definition of 'air pollution' under Section 2(a) of the Air Act by the Amendment Act of 1987 EPA empowers the Central Government under Section 6(2)(b) to make rules in respect of the maximum allowable limits of concentration of pollutants including noise Consequently the Government has prescribed ambient air quality standards in respect of noise by inserting Schedule III to the Environment (Protection) Rules, 1986.[290] These standards are as follows

290 By G S R 1063(E) dated 26th December 1989 For noise limits for generator sets run with diesel, *see* G S R 371(E) dated 17th May, 2002, and for noise limits for vehicles at manufacturing stage, *see* G S R 849(E) dated 30th December, 2002.

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area	Limits in dB(A) Day time	Leg. Night Time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

Note 1: Day time is reckoned in between 6 a.m. and 9 p.m.

Note 2: Nigh time is reckoned in between 9 p.m. and 6 a.m.

Note 3: Silence zone is defined as areas upto 100 metres around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the Competent Authority.

Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these Zones.

In exercise of the powers conferred by the EPA, Central Government has also enacted the Noise Pollution (Regulation and Control) Rules, 2000[291] for the purpose of regulating and controlling noise producing and generating sources. Ambient air quality standards in respect of noise for different areas and zones have been specified in the Schedule annexed to the rules. The standards are the same as stated / shown above except that here day time includes a period from 6 a.m. to 10 p.m. and night time from 10 p.m. to 6 a.m.

Under the rules, the State Government has to take measures for abatement of noise pollution and ensure that prescribed standards are complied with. While planning developmental activities, all aspects of noise pollution have to be considered. For using a loud speaker or a public address system, written permission from the authority has to be obtained and they are not to be used at night (between 10 p.m. to 6 a.m.) except in closed premises. If noise level

291. Vide S.O. 123(E) dated 14th February, 2000.

exceeds the standards by 10 dB(A) or more, any person may lodge a complaint to the authority. In a silence zone or area, whoever plays any music or uses any sound amplifiers, beats a drum or tom-tom or blows a horn, or trumpet or beats or sounds any instrument, or exhibits any mimetic, musical or other performance to attract crowds, is liable to a penalty under the provisions of EPA.

In *Church of God (Full Gospel) in India case*,[292] the Supreme Court held that 'the aforesaid Rules are unambiguous, clear and speak for themselves'. In this case, it was alleged that the appellant Church was causing noise pollution during the course of their regular prayer service by beating of drums, use of voice amplifiers, loud speakers and other instruments. Dismissing the Church's appeal, the Court held:

> Undisputedly, no religion prescribes that prayers should be performed by disturbing the peace of others nor does it preach that they should be through voice amplifiers or beating of drums. In a civilized society in the name of religion, activities which disturb old or infirm persons, students or children having their sleep in the early hours or during day time or other persons carrying on other activities can not be permitted.... Aged, sick people afflicted with psychic disturbances as well as children upto 6 years of age are considered to be very sensitive to noise. Their rights are also required to be honoured.[293]

However, considering the seriousness and ill effects of noise pollution, the laws made in India are not adequate to deal with the situation. In this scenario, the role of the judiciary assumes importance. It is heartening to note that the Supreme Court of India and various High Courts have played a significant role in controlling and preventing the malady of noise pollution. In *Moulana Mufti*

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292. *supra* note 289.
293. *Id.* at 2774.

Syed Md. Noorur Rehman Barkati v. *State of West Bengal*,[294] it was contended that Schedule III of the Environment (Protection) Rules, 1986 does not apply in case of Mosques more particularly at the time of call of Azan and is also *ultra vires* Article 25 of the Constitution The petitioners also prayed for withdrawal of all conditions and restrictions imposed in the case of *Om Birangana Religious Society* v. *State*, reported in 100 CWN 617, wherein similar arguments and prayers were made

One of the important conditions laid down in *Om Birangana's case* was that there will be no user of any microphones / loudspeakers between 9 p m to 7 a m except by the public authorities for discharging their emergent public duties. The principle laid down in *Om Birangana's case* was made applicable to all religions, all functions, private or public, public meetings and so on and not confined to some religions only. It was held that Azan is definitely an integral and essential part of the Muslim religion, but use of microphones is certainly not an integral part of Azan. Undoubtedly, one can practice, profess and propagate religion, as guaranteed under Article 25(1) of the Constitution, but that is not an absolute right and is subject to public order, morality and health

The Court, relying on the decision in *Om Birangana's case*, held that this Court has heard the matter at length and is of the view that the petition is misconceived and has no merit at all and accordingly dismissed. The Court has not prohibited Azan but had only put a restriction on the use of microphones. Azan is recited 5 times a day. There is no problem when it is recited during day

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294. AIR 1999 Calcutta 15. For directions of the Court regarding noise pollution by fire works in the city of Calcutta, *see Burrabazar Fire Works Dealers Association* v *The Commissioner of Police, Calcutta*, 1997(2) CLJ 468.

time i.e. 4 times out of five. It is only in the early hours i.e. before 7 O'clock, Azan ought not to be recited on a microphone. This is the main restriction. The Court directed the Police Authorities to immediately seize and confiscate the microphone / loudspeaker in case of violation of restriction and report the matter to the Court for taking drastic action against the willful and deliberate violators. The laxity on the part of administration in implementing this order was to be dealt with severely since noise not only creates pollution but is also a source of annoyance.

In *Sayeed Maqsood Ali* v. *State of M.P.*,[295] the house of the petitioner, a cardiac patient, was by the side of Sindhi Dharamshala, Jabalpur. The Dharamshala was providing accommodation to various people and was holding many religious functions throughout the year. In these functions loud-speakers were used for playing music at a very high pitch creating disturbance to the petitioner and other persons residing in the locality. The petitioner pleaded that due to noise pollution his health was getting affected and submitted that various complaints and approaches to the authorities for stopping the nuisance had fallen to deaf ears. The petitioner sought directions of the Court to concerned authorities to take action against the use of loud-speaker and other public address system under the provisions of EPA and the Noise Pollution (Regulation and Control) Rules, 2000 and to restrain the respondent from causing such disturbance. Keeping in view the totality of circumstances, the Court held :

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295. AIR 2001 Madhya Pradesh 220.

> It can not be forgotten that excessive noise undoubtedly creates pollution. Every citizen is entitled under Article 21 of the Constitution to live in a decent environment and has the right to sleep peacefully at night... Lack of sleep creates lack of concentration, irritability and reduced efficiency... No one has a right to affect the rights of others to have proper sleep, peaceful living atmosphere and undisturbed thought. No citizen can be compelled to suffer annoying effects of noise as that eventually leads to many a malady which includes cardio vascular disturbance, digestive disorders and neuro psychiatric disturbance.

The Court ordered the competent authorities to see that no function is carried out in violation of the Act and the Rules. Proper steps should be taken to book the violators as per law. The Court also directed the Chief Secretary of the State to send a copy of this order to the District Magistrates of all the districts in the State of M.P. within a period of two months. The District Magistrate shall see that the provisions of EPA and the Noise Pollution Rules, 2000 are obeyed in letter and spirit and no citizen's right is affected.

However, it is important to note that owing to various representations received from State Governments, Noise Pollution Rules, 2000 have been amended by the MoEF vide Notification S.O. 1088(E) dated 11th October, 2002 to permit the use of loud-speakers or public address system during night hours (between 10 p.m. to 12 midnight) on or during any cultural or religious festival for a limited duration not exceeding 15 days in all during a calendar year.

In *Shobana Ramasubramanyam* v. *The Member Secretary, Chennai Metropolitan Development Authority*,[296] the petitioners complained that because of the operation of heavy machinery for digging foundation for multistoried building, noise pollution was caused resulting in lot of

296. AIR 2002 Madras 125.

inconvenience to the residents of the locality and health hazards and also damage to their properties. The driven pile foundation work was going on day and night causing noise pollution, vibration and inconvenience to the residents.

The Court restrained the respondents from proceeding further with the foundation work by using the driven-pile system and held that they are free to proceed further with the foundation work with other modes like bore pilling or any other mode but not with driven-pile machinery. The Court also directed the competent authorities to see that the above restraint order is strictly complied with and to take action in case of violation.

The World Health Organisation has fixed 45 decibels as the safe noise level for a city. But the four Indian metropolitan cities of Bombay, New Delhi, Calcutta and Madras have usually registered more than 90 decibels. Bombay has been rated as the third noisiest city in the world. New Delhi is said to be closely following Bombay in noise pollution and if control measures are not taken to reduce the sound level, the result would be alarmingly disastrous. Most people in India do not consider noise as pollution but part of routine and modern life. In order to curb noise pollution, it is essential that people realise the dangerous consequences of noise and take some remedial measures.[297]

Noise pollution can be curbed by adopting certain measures. Environment friendly technology could be adopted. Machinery might be designed and manufactured in such a way that it does not create more sound than allowable noise limits. Roads may be made sound proof, trees should be planted on both

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297. *Free Legal Aid Cell Shri Sugan Chand Aggarwal alias Bhagatji* v. *Government of NCT of Delhi,* AIR 2001 Delhi 455.

sides of the roads and outside the big factories and industries. Public awareness among masses should be created through seminars, conferences and the evil effects of noise pollution ought to be highlighted. Houses of God should be kept peaceful and noise free as it is rightly said that God is not deaf. Flights of airoplanes should be so planned to curb noise. Noise Code regulating all aspects of noise pollution may be enacted. As the problem of noise pollution has already crossed the danger point and noise like a smog is threatening as a slow agent of death, immediate measures are needed to be taken in this regard.[298]

While concluding it may be said that while the countries like USA, UK and Japan have framed and enforced a number of laws and ordinances to curb the problem of noise pollution, it is really unfortunate that in our country, there is limited awareness in this regard. No doubt, 'noise' has been included in the definition of 'air pollution' and certain Rules have been framed within the ambit of EPA but it is evident that serious attention has not been paid to the problem of noise pollution. The law makers ought to realise the gravity and urgency of the situation and frame a truly effective legislation to control and curb the growing menace of noise pollution.

5.8 Conclusion

Special central enactments in India try to ensure that spurious pesticides and insecticides are not manufactured, sold or distributed, the problems associated with hazardous substances, water pollution, air pollution and noise pollution in

298. *Id.* at 462.

particular and environmental pollution in general are prevented and extensively regulated and also that the appropriate authorities are created / established to monitor that the natural quality of environment and its components is not only protected and preserved but also further improved. The creation of a National Environment Appellate Authority is a welcome step in view of emerging environmental jurisprudence.

The next chapter deals with general central legislations having a direct or indirect bearing on the issue of hazardous substances.

Chapter – 6

General Central Legislations Re: Hazardous Substances

India has a large body of laws dealing directly or indirectly with the control of environmental pollution and conservation of natural resources. These laws are in the form of around 200 Central and State enactments.[1] However, for the purpose of this study, the salient features of following general laws are

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1. *Central enactments on Water Pollution* -The Orient Gas Company Act, 1857; The Serais Act, 1867; The Northern India Canal and Drainage Act, 1873; The Obstruction of Airways Act, 1881; The Indian Fisheries Act, 1897; The Indian Ports Act, 1901; The Indian Forest Act, 1927; The Factories Act, 1948; The Damodar Valley Corporation (Prevention of Pollution of Water) Regulation Act, 1948; The Model Public Health Act, 1953; The River Boards Act, 1956; The Merchant Shipping Act, 1958; Water (Prevention and Control of Pollution) Act, 1974; Water (Prevention & Control of Pollution) Cess Act, 1977; The Coast Gnard Act, 1978; The Cost Guard Act, 1981.
State Enactments on Water Pollution - The M.P. Public Health Act, 1949; The Calcutta Municipal Act, 1951; The Shore Nuisance (Bombay & Kolaba) Act, 1953; The Orissa River Pollution Prevention Act, 1953; The M.P. Municipal Corporation Act, 1957; The Delhi Municipal Corporation Act, 1957; The Maharashtra State Water Pollution Prevention Act, 1969.
Central Enactments on Air Pollution - The Orient Gas Company Act,1857; The Indian Explosives Act, 1884; The Indian Explosive Substances Act, 1908; The Indian Boilers Act, 1923; The Mines & Minerals (Regulation and Development) Act, 1957; The Petroleum Act, 1934; The Motor Vehicles Act, 1988; The Factories Act, 1948; The Industries (Development & Regulation) Act, 1951; The Inflammable Substances Act, 1952; The Mines Act, 1952 and The Air (Prevention & Control of Pollution) Act, 1981.
State Enactments on Air Pollution - The Bengal Smoke Nuisance Act, 1905; The Bombay Smoke Nuisance act, 1912; The M.P. Municipal Corporation Act, 1956; and the Gujarat Smoke Nuisance Act, 1963.
Other Central Enactments on environmental pollution control are The Indian Stream Vessel Act, 1917; The Poison Act, 1919; The Indian Boilers Act, 1923; The Workmsen's Compensation Act, 1923; The Employees' State Insurance Act, 1948; The Ancient Monuments and Archaeological Sites and Remains Act, 1958; The Atomic Energy Act, 1962; The Major Port Trusts Act, 1963; The Beedi and Cigar Works Act, 1966; The Insecticides Act, 1968; The Wildlife (Protection) Act, 1972; The Urban Land (Ceiling and Regulation) Act, 1976; Forest (Conservation) Act, 1980; The Narcotic Drugs and Psychotropic Substances Act, 1985; The Environment (Protection) Act, 1986; Motor Vehicles Act, 1988; The Public Liability Insurance Act, 1991; The National Environment Tribunal Act, 1995; and National Environment Appellate Authority Act, 1997.
In addition to the above mentioned Central and State laws, some *other state enactments* which deserve a mention here are The A.P. Agricultural Pest and Disease Act, 1919; The Mysore Destructive Insects & Pests Act, 1919; The Assam Agricultural Pests and Disease Act, 1954; The U.P. Agricultural Disease & Pests Act, 1954; The Kerala Agricultural Pests and Disease Act, 1958; The A.P. Improvement Schemes Act, 1949; The Acquisition of Land for Floor Control and Prevention of Erosion Act, 1955; The Bihar Waste Lands (Reclamation, Cultivation and Improvement) Act, 1946 and The Delhi Restriction of Land Uses Act, 1964.

discussed. The focus of discussion is on an analysis as to how far the provisions contained therein are capable of controlling and regulating hazardous substances :

Pre-Independence Laws

- The Oriental Gas Company Act, 1857
- The Indian Penal Code, 1860
- The Indian Explosives Act, 1884
- The Explosive Substances Act, 1908
- The Destructive Insects and Pests Act, 1914
- The Poisons Act, 1919
- The Indian Boilers Act, 1923
- The Petroleum Act, 1934
- The Drugs and Cosmetics Act, 1940

Post-Independence Laws

- The Factories Act, 1948
- The Industries (Development and Regulation) Act, 1951
- The Mines Act, 1952
- The Inflammable Substances Act, 1952
- The Prevention of Food Adulteration Act, 1954
- The Mines and Minerals (Regulation and Development) Act, 1957
- The Offshore Areas Mineral (Development and Regulation) Act, 2002
- The Code of Criminal Procedure, 1973
- The Motor Vehicles Act, 1988

The salient features of the above stated general central enactments will be discussed in this chapter in brief. The response of the judiciary shall also be

seen with the help of some relevant cases. The legislative efforts in this direction can be traced from the year 1857 when the Oriental Gas Company Act was enacted which made it obligatory for the Orient Gas Company, responsible for the supply of gas, to prevent the gas from escaping. Financial liability was imposed upon the company in case of failure. The main features of these enactments with special reference to hazardous substances may be summarised with the help of the following table which has been prepared to give a general idea of their scope and relevant provisions at a glance:

Sl.	Name of the Act	Scope	Relevant Provisions
1.	The Oriental Gas Company Act, 1857	Prevention of air and water pollution.	• Prevention of gas from escaping into air or water bodies. • Imposition of fine on the company in case of failure.
2.	The Indian Penal Code, 1860	Control of public nuisance.	• Punishment in certain cases of nuisance.
3.	The Indian Explosives Act, 1884	Regulation of manufacture, possession, use, sale, transport, import and export of explosives.	• Licensing regime. • Inquiry in cases of accidents. • Imprisonment and/or fine in case of contravention.
4.	The Explosive Substances Act, 1908	Control of anarchist crimes	• Deterrent punishment of a person who causes or attempts to cause an explosion or makes or possesses any explosive substance. • Death penalty, imprisonment for life and fine.
5.	The Destructive Insects and Pests Act, 1914	Prevention of introduction into India and transport from one State to another of any insect, fungus or other pest destructive to crops.	• Imposition of fine in case of contravention.
6.	The Poisons Act, 1919	Regulation of importation, possession and sale of poisons.	• Licensing regime, authorisation, inspection and examination, confiscation of poison. • Imprisonment and/or fine in case of contravention.
7.	The Indian Boilers Act,	To secure uniformity	• Proper maintenance and

	1923	throughout India in the technical matters relating to boilers.	working of boilers. • Registration and authorisation. • Imprisonment and /or fine in case of contravention.
8.	The Petroleum Act, 1934	To consolidate and amend the law relating to import, transport, storage, production, refining and blending of petroleum.	• Licensing regime. • Information of accidents to authorities and inquiries thereafter. • Imprisonment and/or fine in case of contravention.
9.	The Drugs and Cosmetics Act, 1940	Regulation of import, manufacture, distribution and sale of drugs and cosmetics.	• Standards and purity of drugs and cosmetics. • Constitution of Board, Laboratory and Committee. • Appointment of analyst and inspectors. • Role of Consumer Associations • Imprisonment (mandatory minimum and maximum) including life imprisonment as per gravity of the offence, fines and confiscation of property and apparatus etc.
10.	The Factories Act, 1948	Promotion of health and welfare of workers employed in factories including adequate safety measures.	• Appointment of factory inspectorates and safety officers, health surveys. • Safeguards in case of use and handling of hazardous substances and processes. • Long term imprisonments and heavy fines in case of contravention.
11.	The Industries (Development and Regulation) Act, 1951	Development and regulation of important industries.	• Licensing regime, registrations, constitution of Central Advisory Council. • Imprisonment and/or fine in case of contravention.
12.	The Mines Act, 1952	Regulation of labour and safety in mines.	• Health, safety and comfort of workers, service conditions. • Imprisonment and/or fine in case of contravention.
13.	The Inflammable Substances Act, 1952	Regulation of import, transport, storage and production of dangerously inflammable substances.	• Application of Petroleum Act, 1934.
14.	The Prevention of Food Adulteration Act, 1954	Prevention of adulteration of food	• Constitution of Central Committee for food

		stuffs.	standards, establishment of laboratories for tests or analysis, appointment of public analysts, food inspectors. • Punishment including mandatory minimum imprisonment and fine in case of contravention.
15.	The Mines and Minerals (Regulation and Development) Act, 1957	Regulation and development of mines and minerals.	• Licensing regime. • Protection of environment and prevention of pollution, rehabilitation. • Imprisonment and/or fine in case of violation.
16.	The Offshore Areas Mineral (Development and Regulation) Act, 2002	Development and regulation of mineral resources in offshore areas.	• Licensing regime. • Prevention and control of pollution and protection of marine environment. • Penal and civil liability in case of contravention.
17.	The Code of Criminal Procedure, 1973	Independent, speedy and summary remedy against public nuisance.	• Removal of nuisance within a fixed period of time. • Imprisonment and/or fine in case of non-compliance.
18.	The Motor Vehicles Act, 1988	Control of air and noise pollution by providing standards for motor vehicles and vehicular emissions.	• Licensing, registration, insurance policies. • Emission standards. • Imprisonment and/or fine in case of contravention.

6.1 The Oriental Gas Company Act, 1857

The Oriental Gas Company Act, 1857[2] (hereinafter 'the Act') is the oldest law in India dealing with air and water pollution. The Act authorised the Oriental Gas Company Ltd. to manufacture and supply the Gas in Calcutta and other towns and places.[3] The company was empowered to open and break up the soil, sewers, drains or tunnels for the purpose of laying down the pipes, conduits, service-pipes and other works necessary for the making or supply of gas. However, during the execution of such work, if the gas escapes and the company receives a notice thereof, it was made obligatory for the company to

2. Act 5 of 1857.
3. For extension of the Act to certain places in India, *see* the Oriental Gas Company Act, 1867 (Act 11 of 1867)

effectually prevent the gas from escaping and wholly remove the cause of complaint within twenty four hours. In case of failure, the company was to forfeit a sum of fifty rupees for each day during which the gas was suffered to escape.[4]

If the work resulted in the fouling of water of any stream, reservoir, aqueduct pond, or place, it was provided that the company should forfeit, for every such offence, a sum not exceeding one thousand rupees and an additional sum not exceeding five hundred rupees for each day during which fouling continued.[5] In case of a person whose water was so fouled, the company was to forfeit a sum not exceeding two hundred rupees, and a further sum, not exceeding one hundred rupees for each day during which the offence continued.[6] All penalties, forfeitures, damages and expenses under the Act were recoverable by summary proceeding before a Magistrate.[7]

Therefore, the Act conferred certain powers on the Oriental Gas Company Ltd. to open and break up the soil, sewers, drains or tunnels for the purpose of supplying the gas to inhabitants, but if in the execution of such powers any damage was caused, the company had to compensate.

6.2 Indian Penal Code, 1860

Chapter XIV of Indian Penal Code,[8] consisting of 28 Sections, deals with public nuisance[9] i.e. offences affecting the public health, safety, convenience,

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4. Section 16.
5. Section 15.
6. Section 17.
7. Section 24.
8. Act No. 45 of 1860.
9. Section 268, I.P.C. defines public nuisance as 'a person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right.
A common nuisance is not excused on the ground that it causes some convenience or advantage'.

decency and morals. Chapter XIV is a comprehensive mandate on public nuisance and makes punishable the following cases of nuisance:

1. Spreading of infections (Sections 269-271)
2. Fouling water of public spring or reservoir (Section 277).
3. Making atmosphere noxious to health (Section 278).
4. Rash driving (Section 279).
5. Rash navigation (Section 280)
6. Endangering public way and line of navigation (Sections 281-283).
7. Negligent conduct with respect to poisonous substance, fire or combustible matter and explosive substance (Sections 284-286).
8. Negligent conduct with respect to machinery, buildings and animal (Sections 287-289)

Section 290 punishes those cases of nuisance which have not been specifically covered under the above stated provisions, for example, nuisance by noise. In order that a person may be convicted under Section 290, I.P.C., there must be public nuisance by doing an act or an illegal omission causing any common injury, danger or annoyance to the public.[10]

The word 'nuisance' is derived from the French word 'nuire', which means 'to do hurt or to annoy'. It has been defined by Stephen to be anything done to the hurt or annoyance of the lands, tenements, or hereditaments of another and not amounting to trespass.[11] In *Achammagari Venkata Reddy* v. *The State*,[12] the Court analysed the offence of public nuisance as under:

a) it may be caused either by an act or illegal omission,

b) the effect of the act or omission thereof must be either injury, danger or annoyance,

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10. *In re Govinda Naidu and others*, AIR 1959 Madras 513.
11. Stephen, III, 499.
12. AIR 1953 Madras 242.

c) the injury must be caused either to the public or to that portion of the public who dwell or occupy property in the vicinity, or

d) threatens the necessity of persons who may have occasion to use any public right.

Bearing these principles in mind, the Court observed that a person commits a public nuisance if he by raising the level of and crossbunding a public way causes stagnation of water leading to breeding of mosquitoes etc, giving rise to offensive smell and causing danger to the health or annoyance of the persons living in the vicinity.

In *Kirori Mal Bishambar Dayal* v. *The State*,[13] the petitioner was running a metal factory in a residential locality for the manufacture of brass utensils. The owners and occupiers of residential buildings in the vicinity of the factory complained that the noise caused by the factory interfered unreasonably with the comfort and enjoyment of private property, that the vibrations caused by the heavy machinery were shattering the foundations of their buildings and that the smoke emitted by the chimneys were contaminating the general atmosphere.

The Court held that although a person is at liberty to carry on any trade or business on the property belonging to him he has no right to do so if such trade or business deprives another of the reasonable and comfortable use of his property. Even a lawful trade would become a nuisance if it interferes with the comfort and enjoyment of the neighbours, gives offence to their senses or obstructs the reasonable use of property. A manufacturing plant situated at a

13. AIR 1958 Punjab 11.

considerable distance from human habitation may not be nuisance while a similar plant situated in the heart of a town where a large number of people reside or carry on business may be a nuisance. A particular trade or business may be lawful to start with but may become a nuisance by reason of changed circumstances such as the growth of population The Court further held

> The question whether a particular trade or business is or is not a nuisance can be determined only after taking into consideration a number of circumstances such as the place where it is located or carried on, the number of people whose rights are prejudicially affected thereby and the extent of the injury, discomfort and annoyance caused to normal human beings The mere fact that the factory was allowed to operate for several years without any objection having been raised by the neighbours would not render the petitioner immune from punishment if it is found that its existence constitutes a nuisance to the people of the neighbourhood It has been held repeatedly that no prescriptive right can be acquired to maintain, and no length of time can legalise, a public nuisance [14]

The Court drew support from the following observations made by their Lordships of the Court of Appeal in *Andrea* v. *Selfridge & Company Ltd* [15]

> I certainly protest against the idea that, if persons, for their own profit and convenience, choose to destroy even one nights rest of their neighbours they are doing something which is excusable. To say that the loss of one or two nights rest is one of those trivial matters in respect of which the law will take no notice appears to me to be quite a misconception, and, if it be a misconception existing in the minds of those who conduct these operations, the sooner it is removed the better.

Therefore, if one works for his own benefit and causes injury, annoyance, discomfort or inconvenience to others, he is committing a wrong Whatever may be the nature of the nuisance, the individual's freedom and liberty can not be compromised by any other person except in accordance with law. If one

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14. *Id* at 13.
15 (1937) 3 All ER 255.

works for gain and causes discomfort to others, he can not avoid liability. Public health can not be allowed to suffer.

6.3 The Indian Explosives Act, 1884

The Indian Explosives Act, 1884[16] (hereinafter 'the Act') was drawn on the model of the English Explosives Act, 1875 'to deal with the subject of explosives in its entirety and furnish the public, as well as Government Officials, with an easy means of ascertaining their duties, responsibilities and powers respecting articles which by their inflammable, explosive or dangerous nature imperil the public safety'. However, after independence, many large and small companies began to manufacture high explosives and so the Act, which was based on the old British pattern, resulted in difficulties for the industry. With a view to removing the short comings and to obviate the difficulties, the Act was suitably amended in 1978.

The Explosives Act regulates the manufacture, possession, use, sale, transport, import and export of explosives.[17] These activities are prohibited except under a licence granted by the Central Government in accordance with the rules made in this behalf.[18] The licensing authority, after making an inquiry, grants a licence on being satisfied that either the person himself or his employee possesses technical know-how and experience in the manufacture of explosives and, for any other purpose, has a good reason for obtaining the same.[19] A licence should be refused in respect of any prohibited explosive, in case of a person

16. Act 4 of 1884. As amended by Acts 10 of 1927; 3 of 1951; 3 of 1952 and 32 of 1978.
17. For definition of 'explosive' *see* Section 4(d).
18. Section 5. *See* the Explosives Rules, 1983.
19. Section 6B.

prohibited by the Act or of unsound mind or on grounds of public peace and security.[20] A person is prohibited from carrying on any activity under the Act if he is under eighteen years of age or is convicted of any offence involving violence or moral turpitude or has executed a bond for keeping peace or be of good behaviour under Chapter VIII of the Code of Criminal Procedure, 1973 or whose licence has earlier been cancelled.[21]

The licensing authority has power to impose additional licensing conditions or vary them and suspend or revoke licences.[22] Any person aggrieved by an order of licensing authority may prefer an appeal to the appellate authority within the period prescribed under the provisions of the Limitation Act, 1963. The appellate authority should dispose of the appeal after giving the appellant a reasonable opportunity of being heard.[23]

Any officer authorised by the Central Government has power to enter, inspect and examine any place, aircraft, carriage or vessel and to search and seize any explosive.[24] In case of an accident resulting in loss of human life or serious injury to person or property, the person concerned should bring the matter to the notice of Chief Controller of Explosives and to the officer in charge of the nearest police station.[25] The naval, military, air force authority or the District Magistrate, as the case may be, should hold an inquiry into the causes of the accident and make a report to the Central Government.[26] In case of more

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20. Section 6C.
21. Section 6A.
22. Sections 6D & 6E.
23. Section 6F.
24. Section 7.
25. Section 8.
26. Section 9.

serious accidents, the Central Government may appoint Chief Controller of Explosives or any other competent person as inquiry officer to make a report.[27]

Contravention of the provisions of the Act or rules made thereunder results in criminal liability which may be imprisonment upto three years or fine upto five thousand rupees or both.[28] The penal provisions apply to companies and every person who was incharge of, or responsible to the company at the time the offence was committed, is deemed to be guilty of the offence. Likewise, if the offence is committed with the consent or connivance of, or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, they are also deemed to be guilty of the offence. However, it can be proved that the offence was committed without knowledge and even after exercising all due deligence to prevent its commission.[29] The penal provisions extend to abetment and attempts also.[30] A person committing dangerous offences which tend to cause explosion or fire, may be apprehended without a warrant.[31]

If the manufacture of an explosive is carried out in contravention of any of the conditions of the licence, that contravention itself, without anything more, becomes an offence for which the licensee himself is liable. The obligation is upon the licensee himself to see that the prohibition against the manufacture of an explosive in contravention of the conditions of the licence is not evaded or relaxed. The responsibility is upon the licensee for whatever is done in the

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27. Section 9A.
28. Section 9B.
29. Section 9C.
30. Section 12.
31. Section 13.

licensed premises in connection with the manufacture, possession or sale of explosives [32]

When safety of the people at large and public property is at stake and if the safety measures require that some hardship be undergone by those who want to deal in dangerous substances, it can never be said that the decision of the authority is in any way arbitrary or unreasonable The Indian Explosives Act, 1884 and the Explosives Rules, 1983 are meant for the safety of the public property and the people [33]

The use of explosives, at present, has considerably increased in connection with various works undertaken by the Government as well as private companies and it is likely that their use will further increase in future The Explosives Act and the rules made thereunder serve the purpose of protecting the public against the dangerous nature of explosives by regulating all the dealings in such substances

6.4 The Explosive Substances Act, 1908

In order to supplement the existing law contained in the Indian Explosives Act, 1884, Indian Arms Act, 1878 and Indian Penal Code, 1860, the Explosive Substances Act, 1908[34] (hereinafter 'the Act') was enacted on the lines of the English Explosive Substances Act, 1883 The purpose of the Act is to deal with anarchist crimes It provides for the punishment of a person who causes an explosion likely to endanger life or property or attempts to cause such an

32 *State* v *Ismail Shakur Moram*, AIR 1958 Bombay 103
33 *Banaskantha District Fire Works Association* v *District Magistrate*, AIR 1989 Gujarat 48
34 Act 6 of 1908 As amended by Act 3 of 1951 and Act No 54 of 2001

explosion or makes or has in his possession any explosive substance[35] with intent to endanger life or property. It further makes the manufacture or possession of explosive substances for any other than a lawful object a substantive offence and throws on the person who makes or is in possession of any explosive substance the onus of proving that the making or possession was lawful. It provides for the punishment of both the principals and accessories

Punishment for unlawfully and maliciously causing explosion likely to endanger life or property is imprisonment for life or rigorous imprisonment which should not be less than ten years and fine. In case of an explosion by means of 'special category explosive substance', the punishment is death penalty or rigorous imprisonment for life and fine.[36] Punishment for attempt to cause explosion, or for making or keeping explosive with intent to endanger life or property shall be -

a) in case of any explosive substance, imprisonment for life or imprisonment for a term which may extend to ten years and fine, and

b) in case of any special category explosive substance, rigorous imprisonment for life or rigorous imprisonment for a term which may extend to ten years and fine.[37]

Punishment for making or possessing explosives under suspicious circumstances, unless shown that making or possession was for a lawful object, shall be -

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35. Section 2(a) defines an 'explosive substance' as 'any materials for making an explosive substance; also any apparatus, machine, implement or material used, or intended to be used, or adapted for causing, or aiding in causing, any explosion in or with any explosive substance; also any part of any such apparatus, machine or implement'.
36. Section 3. Section 2(b) was inserted by the Amendment Act of 2001 to define the expression "special category explosive substance" which includes research development explosive (RDX) and other similar types of explosives and a combination thereof and remote control devices causing explosion.
37. Section 4.

a) in case of any explosive substance, imprisonment for a term which may extend to ten years and fine; and

b) in case of any special category explosive substance, rigorous imprisonment for life or rigorous imprisonment for a term which may extend to ten years and fine.[38]

However, for the trial of any person under the Act, consent of the Central Government is necessary.[39]

6.5 The Destructive Insects and Pests Act, 1914

The Destructive Insects and Pests Act, 1914[40] (hereinafter 'the Act) was enacted to prevent the introduction into India and the transport from one State to another of any insect, fungus or other pest, which is or may be destructive to crops. The Central government may, by notification in the Official Gazette, prohibit or regulate the import into India[41] and transportation from one State to another of any article or class of articles or insects likely to cause infection to any crop.[42] Contravention of the provisions is made punishable with fine which may extend to two hundred and fifty rupees and subsequent conviction with fine which may extend to two thousand rupees.[43]

In *S.R.I. Roller Mills Pvt. Ltd.* v. *Union of India*,[44] the Bombay High Court held that Section 3 of the Act gives power to the Central Government 'to prohibit or regulate... the import into India... of any article or class of articles

38. Section 5.
39. Section 7.
40. Act 2 of 1914. As amended by Acts 20 of 1930; 6 of 1938; 3 of 1939; and 12 of 1992.
41. Section 3. *See* Plants, Fruits and Seeds (Regulation of Import into India) Order, 1989.
42. Section 4A.
43. Section 5A.
44. AIR 1992 Bombay 79.

likely to cause infection to any crop or of insects generally or any class of insects' Therefore, the import of any article likely to infect crops can either be banned or regulated The actual article imported need not be a 'crop' If pulses which are imported into India are infected with any harmful insects or fungus or the like which may adversely affect any crops in the country, there is no reason why U/S 3 of the Act, their import can not be regulated or banned

Thus the Act, which was prepared after consultation with experts and various bodies and persons interested in gardening and agriculture, seeks to prevent the import and transport of any insect, fungus or other pests in order to protect plants, fruits and seeds The controls on import and transport would prevent the entry of exotic diseases through such imported or transported consignments

6.6 The Poisons Act, 1919

The Poisons Act, 1919[45] (hereinafter 'the Act') deals with the importation, possession and sale of poisons A 'poison' is any substance specified as a poison in a rule made or notification issued under the Act [46]The Act empowers the State Government to make rules for the purpose of regulating the possession for sale or the sale of any specified poison, whether wholesale or retail The rules may provide guidelines for the grant of licences to only certain classes of persons, the fees to be charged for such licences, the classes of persons to whom alone any poison may be sold, the maximum quantity which may be sold to any one person, the maintenance of registers of sales by vendors and their inspection, the labeling, packaging or coverings for safe custody of

45 Act 12 of 1919 As amended by Acts 38 of 1920, 47 of 1958 and 4 of 1986
46 Section 5

poisons and inspection and examination of any such poison.[47] The Central Government is empowered to prohibit the import of any poison into India except under a licence and may by rule regulate the grant of such licences.[48]

The State Government may also, by rule, restrict the possession of any specified poison in any local area in which the use of such poison for committing murder or mischief by poisoning cattle becomes frequent. It may be directed that the breach of any such rule shall be punishable with imprisonment for a term which may extend to one year, or with fine which may extend to one thousand rupees, or with both, together with confiscation of the poison in question.[49]

Contravention of the provisions of the Act or rules made thereunder has been made punishable with imprisonment for a term which may extend to three months or with fine which may extend to five hundred rupees, or with both In case of subsequent conviction, the offender is to be punished with imprisonment for a term which may extend to six months or with fine which may extend to one thousand rupees or both. The poison in question may also be liable to confiscation.[50] The District Magistrate, the Sub-Divisional Magistrate or the Commissioner of Police have power to issue search warrant for the search of any place where any poison is possessed or sold in contravention of the Act or rules made thereunder or any poison liable to confiscation is kept or concealed.[51] The Central Government and the State Government have concurrent powers to make rules generally to carry out the

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47. Section 2.
48. Section 3.
49. Section 4.
50. Section 6.
51. Section 7.

purposes and objects of the Act.[52] A medical or veterinary practitioner has been accorded protection under the Act for anything done in good faith in the exercise of his profession.[53]

In *Hukum Chand* v. *State*,[54] the applicant's brother had a licence to sell certain poisons as a duly authorised licensee. After his death, the applicant, who was residing in the same house, came into the possession of these poisons. He was convicted for being in possession of a number of poisons without any licence for the same. He filed a revision application in Allahabad High Court.

The Court held that the applicant could not be convicted merely for the possession of the poisonous substances specified in the Schedule, unless it was further proved by the prosecution that the said possession was for 'sale'. The circumstances did not indicate that he had any intention of selling them without a licence. He never concealed his posession and disclosed the same to the authorities after the death of his brother. His conduct throughout had been honest, straight forward and innocent. There can, therefore, be no doubt about his bonafides. In these circumstances, the conviction was set aside.

The object of the Act is to regulate the possession for sale and the sale, whether wholesale or retail of poisons and the importation of the same. The nature of trade in poison is such that no body can be considered to have an absolute right to carry on the same. It is a business which can be termed even as inherently dangerous to health and safety of the society. A law in such circumstances can regulate the trade. This position is well settled and it would

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52. Section 8.
53. Section 9.
54. AIR 1957 Allahabad 705.

be pedantic to cite all the authorities on this point. It is also not necessary that the same substance should be declared as poison for the entire country. The notification and its application to any area would depend on the necessity to declare the substance as poison on the particular facts and situation prevailing in that area and the need to regulate the possession and sale in that area. No question of discrimination can arise in such circumstances.[55]

6.7 The Indian Boilers Act, 1923

The Indian Boilers Act, 1923[56] (hereinafter 'the Act') was enacted to secure uniformity throughout India in all technical matters connected with boiler regulations, e.g., standards of construction, maximum pressure, and to insist on the registration and regular inspection of all boilers[57] throughout India. The State Government may appoint Chief Inspector, Deputy Chief Inspectors and Inspectors to exercise powers and perform duties under the Act and to advise the owners regarding proper maintenance and working of boilers.[58] The owner can use the boiler only when it has been registered; has obtained a certificate or provisional order authorising the use; at a pressure not exceeding the maximum pressure recorded in such certificate or provisional order; and in accordance with the rules made by the State Government in this behalf.[59] The Chief Inspector may withdraw or revoke any certificate or provisional order if it was obtained fraudulently or the boiler has ceased to be in good condition or is in

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55. *See Goodwill Paint and Chemical Industry* v. *Union of India*, AIR 1991 SC 2150.
56. Act 5 of 1923. As amended by Acts 9 of 1929; 11 of 1937; 5 of 1942; 17 of 1943; 34 of 1947; 40 of 1949; 3 of 1951; 38 of 1951; 25 of 1952; 48 of 1952; 18 of 1960; and 4 of 1986.
57. 'Boiler' means any closed vessel exceeding 22-75 litres in capacity which is used expressly for generating steam under pressure and includes any mounting or other fitting attached to such vessel, which is wholly or partly under pressure when steam is shut off. [section 2(b)].
58. Section 5.
59. Section 6.

charge of a person who is incompetent or not holding the certificate as required by the rules.[60]

Any person aggrieved by the order of Chief Inspector may, within thirty days, file an appeal to the appellate authority.[61] The Central Government has power to revise the order of appellate authority.[62] Illegal use of boiler has been made punishable with fine which may extend to five hundred rupees and in case of a continuing offence, with an additional fine which may extend to one hundred rupees for each day.[63] Fraudulently marking upon a boiler a registration number which has not been allotted to it, is punishable with imprisonment which may extend to two years, or with fine, or with both.[64]

A Central Boilers Board has been constituted under the Act for the purpose of making regulations.[65] The Central as well as State Government have been empowered to make rules,[66] the breach of which is made punishable with fine which may extend to one hundred rupees.[67]

The Act, therefore, provides mainly for the safety of life and property of persons from the dangers of explosion and the achievement of uniformity of practice in regard to the construction, operation, inspection, registration and maintenance of boilers. It should be considered as an important piece of legislation in view of increasing industrialisation which has necessitated the use of high pressure boilers.

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60. Section 11.
61. Section 20.
62. Section 20A.
63. Section 23.
64. Section 25(2).
65. Sections 27A & 28.
66. Sections 28A & 29.
67. Section 30.

6.8 The Petroleum Act, 1934

The Petroleum Act, 1934[68] (hereinafter 'the Act') was enacted for the purpose of consolidating and amending the law relating to the import, transport, storage, production, refining and blending of petroleum.[69] These activities are to be carried on in accordance with the conditions of any licence granted and the rules made by the Central Government in this behalf.[70] The Central Government has power to authorise any officer to carry out inspection and sampling of petroleum, standard test apparatus, re-testing in certain cases and enter and search any place for the purpose of implementing the provisions of the Act.

In case of any accident resulting in loss of human life or serious injury to person or property, the occupier or the person incharge of the petroleum or carriage or vessel has to give a notice thereof to the nearest Magistrate or officer-in-charge of the nearest police station and to the Chief Controller of Explosives. The Magistrate should then make an inquiry into the causes of accident and submit a report to the Central Government, the Chief Controller of Explosives and the State Government.[71]

Whoever contravenes the provisions of the Act is punished with simple imprisonment which may extend to one month or with fine which may extend to one thousand rupees or with both. For subsequent offences, the punishment

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68. Act 30 of 1934. As amended by Acts 1 of 1938; 25 of 1940; 3 of 1941; 24 of 1970; and 31 of 1977.
69. 'Petroleum' means any liquid hydrocarbon or mixture of hydrocarbons, and any inflammable mixture (liquid, viscous or solid) containing any liquid hydrocarbon. [Section 2(a)].
70. *See* The Petroleum Rules, 1976.
71. Sections 27 & 28.

is simple imprisonment which may extend to three months or fine upto five thousand rupees or both.[72]

Strict adherence to statutory provisions and the Petroleum Rules and their compliance can not be underscored having regard to the nature of produce required to be secured, their safety and prevention of any adulteration or misuse thereof. The licensee, if he violates the terms and conditions of the Petroleum Rules or violates any statutory provision governing the storage of petroleum products, the licensee shall be deemed to have ceased to have the right to use site for storing petroleum.[73]

6.9 The Drugs and Cosmetics Act, 1940

The Drugs and Cosmetics Act, 1940[74] (for short 'the Act') regulates the import, manufacture, distribution and sale of drugs[75] and cosmetics[76] in the country. The problem of adulteration of drugs and also of production of spurious and sub-standard drugs poses a serious threat to the health of the community. Similarly, application of various organic synthetics and

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72. Section 23.
73. *See M/s Pratap Oil Company* v. *State (NCT of Delhi)*, AIR 2000 Delhi 348.
74. Act 23 of 1940. As amended by Acts 40 of 1949; 3 of 1951; 11 of 1955; 35 of 1960; 21 of 1962; 13 of 1964; 19 of 1972; 68 of 1982; and 71 of 1986.
75. 'Drug' includes- (i) all medicines for internal or external use of human beings or animals and all substances intended to be used for or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals, including preparations applied on human body for the purpose of repelling insects like mosquitoes; (ii) such substances (other than food) intended to affect the structure or any function of the human body or intended to be used for the destruction of vermin or insects which cause disease in human beings or animals, as may be specified from time to time by the Central Government by notification in the Official Gazette; (iii) all substances intended for use as components of a drug including empty gelatin capsules; and (iv) such devices intended for internal or external use in the diagnosis, treatment, mitigation or prevention of disease or disorder in human beings or animals, as may be specified from time to time by the Central Government by notification in the Official Gazette, after consultation with the Board. (Section 3(b)).
76. 'Cosmetic' means any article intended to be rubbed, poured, sprinkled or sprayed on or introduced into, or otherwise applied to, the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and includes any article intended for use as a component of cosmetic. [Section 3(a)].

intermediates to the formulation of cosmetics may have deleterious effects on the health of the people. Contact dermatitis is one of the evil effects of using certain cosmetics. Apart from dermatitis, there is also the risk of cumulative toxicity of azo and other synthetic dyes used in the manufacture of lipsticks, etc. The original Drugs Act, 1940 was amended by Act 21 of 1962 to include regulation of substandard and misbranded cosmetics also. Initially the provisions of the Act did not apply to Ayurvedic or Unani systems of medicine. Subsequently, after the Amendment Act 13 of 1964, these medicines were also brought within the scope of the Act.

The Act provides for the constitution and establishment of the Drugs Technical Advisory Board, the Central Drugs Laboratory and the Drugs Consultative Committee to carry out functions assigned to them. Government Analyst and Inspectors are to be appointed by the Central Government or the State Government. The Central Government has powers to prohibit the manufacture, sale or import of drugs and cosmetics in public interest and power to make rules.[77] 'Standards of quality' to be complied with have been provided in the Second Schedule. The provisions of the Act apply to government departments and companies also.

Different scales of punishment have been provided for the first offence and subsequent offences including mandatory minimum. Penalties may range from three months imprisonment to life imprisonment and fines from five hundred rupees to not less than ten thousand rupees as per the nature of the offence. In addition, the Act provides for the confiscation of property and apparatus etc. in

77. *See* Drugs and Cosmetics Rules, 1945.

certain cases. Some cases may be tried summarily provided the term of imprisonment does not exceed one year. No Court below the rank of a Metropolitan Magistrate or a Judicial Magistrate of the first class can try the case under the Act

The Act is basically a consumer protection legislation and is mainly concerned with the standards and purity of drugs and cosmetics To promote voluntary consumer movement and to ensure involvement of recognised Consumer Associations, the Act confers necessary powers on recognised Consumer Associations to initiate legal action and launch prosecution on the basis of test reports given by Government Analyst

In *Chimanlal Jagjivandas Sheth* v. *State of Maharashtra*,[78] the appellant was charged for storing and manufacturing large quantities of spurious drugs e g absorbent cotton wool, roller bandages, gauze and other things and passing them off as goods manufactured by a firm of repute. The High Court convicted him and sentenced him to undergo rigorous imprisonment for three months and to pay a fine of Rs 500. On an appeal to the Supreme Court, the Court observed that the definition of 'drugs' under Section 3(b) of the Act is comprehensive enough to include not only medicines but also substances intended to be used for or in the treatment of diseases of human beings or animals. The expression 'substances' includes 'things' like absorbent cotton wool, roller bandages and gauze. These are essential materials for treatment in surgical cases. The Court held·

78. AIR 1963 SC 665. ·

> The legislature designedly extended the definition of "drugs" so as to take in substances which are necessary aids for treating surgical or other cases. The main object of the Act is to prevent substandards in drugs, presumably for maintaining high standards of medical treatment. That would certainly be defeated if the necessary concomitants of medical or surgical treatment were allowed to be diluted; the very same evil which the Act intends to eradicate would continue to subsist.

The Court, therefore, found the appellant guilty of an anti-social act of a very serious nature and held that 'the punishment of rigorous imprisonment for three months was more lenient than severe'.

In *Sk. Amir* v. *State of Maharashtra*,[79] the appellant was apprehended by a railway constable with a parcel containing 95,000 capsules commonly used for intoxication. The Judicial Magistrate found him guilty of stocking for sale a misbranded drug without a licence and imposed upon him a fine of Rs. 1200. In appeal, the Sessions Judge acquitted him on the ground that the mere fact that the appellant was carrying the parcel would not justify the inference that the drug was stocked for sale. This decision of the learned Sessions Judge was set aside in appeal by the High Court of Bombay which held that the prosecution had proved conclusively that the accused had stocked the drug for sale and sentenced the appellant to the minimum sentence of one year's imprisonment prescribed by the Act.

On a further appeal to the Supreme Court, Chandrachud, J. came to the conclusion that the substance which the appellant was found carrying is a 'drug' and a 'misbranded drug' and that he had no valid licence to stock it for sale. He observed:

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79. AIR 1974 SC 469.

> If anyone keeps or carries a drug on his person in contravention of the terms of the Act and it is proved that the drug is kept or carried for sale, the act must fall within the mischief of the law under consideration... 'Keeping' for sale is of the essence of the matter, not the mode and the manner of keeping. To keep for sale is to stock for sale... The large quantity of 95,000 capsules found in the possession of the appellant leaves no doubt that he had stocked or kept the drug for sale. It could not have been meant for his personal use and his defence that he had received the parcel on behalf of another person, not knowing what it contained, was rightly rejected by all the three Courts.[80]

The appeal was accordingly dismissed and the order of the High Court was confirmed.

In *State of Karnataka* v. *Dr. T.V. Ganji*,[81] the plaintiff claimed that the defendants (Government Officials)were harassing him by illegally and unnecessarily searching, inspecting and seizing his goods and medicines manufactured and stored by him. He asked for a permanent injunction restraining the defendants. The Munsiff, and in appeal, the Civil Judge granted temporary injunction. The defendants, being aggrieved by the grant of temporary injunction, filed a revision petition in the High Court. They contended that the product was seized in accordance with the law and sent to the Chemical Examiner who found the sample as 'unfit for human consumption' and therefore, the drug seized by them was an adulterated drug within the meaning of Section 9B of the Act. If such a dangerous product would be openly available in the market, it would be a health hazard. The defendants further contended that the plaintiff was in the habit of filing suits and obtaining temporary injunctions and withdrawing the suits after achieving

80. *Id.* at 670-71.
81. AIR 1986 Kant. 94.

his ends. They placed on record a number of such suits. Moreover, the licence granted to the plaintiff had expired.

The High Court held that the drug in question was an adulterated drug being manufactured without a valid licence. Such a drug could not be manufactured at all under the provisions of the Act. The Court observed:

> The grant of temporary injunction in such serious matters would enable the plaintiff to manufacture and sell such adulterated drugs under the guise of a temporary injunction granted by the courts. The Court should not grant temporary injunction in such serious matters especially where the health of the public is to be affected to a large extent. The parties can not be allowed to manufacture or sell such drugs with the help of a temporary injunction... The courts should bear in mind that the parties are likely to misuse the equitable relief of temporary injunction granted to them in such cases.[82]

Therefore, the orders passed by the lower courts were held to be opposed to the provisions of law being capricious, perverse and unreasonable. The revision was allowed and the temporary injunction granted by the Munsiff and confirmed by the Civil Judge was vacated.

In *State of M.P.* v. *M/s Asian Drugs*,[83] the Court held:

> Where a particular act is made statutorily penal, the question of mens rea does not arise, if the act is proved. In the instant case, manufacturing of drugs contrary to the terms of the licence granted to the manufacturer is not only prohibited, but also made penal. It is not open to the Court to insist for any proof of guilty mind on the part of the accused contravening the terms of the licence.

In *Balwant Rai* v. *State of J&K*,[84] the High Court held that :

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82. *Id.* at 98.
83. 1990 Cri.L.J. 105 (M.P.)
84. AIR 1991 J&K 20.

> the provisions of the 1940 Act and the Rules are made in public interest at large to ascertain purity and achieving sale and supply of standard drugs and the medicine to the public at large Regulating the same by issue of licence under the Act and the Rules in order to prevent adulteration and supply etc of substandard quality of Drugs and Cosmetics is a reasonable restriction placed on a dealer who deals in wholesale or retail and can not be said to be violative of Article 19 of the Constitution of India

The intention of the Legislature is that the drugs which are hazardous or without therapeutic value or without any therapeutic justification should not be allowed to be manufactured, sold or distributed It is clearly a reasonable restriction on the freedom of carrying business by any person The power given to the Central Government is neither uncontrolled nor unguided A particular drug would be banned only if the Government is satisfied about the hazardous nature of the drug or its nil therapeutic value or no therapeutic justification Above all, the Government is also to be satisfied that public interest warrants such prohibition All these factors constitute definite guidelines to the Central Government before prohibiting manufacture, sale or distribution of a drug or cosmetic and, therefore, removes the element of arbitrariness [85] Thus, a notification completely prohibiting manufacture and sale of drug is not either violative of Article 14 of the Constitution of India or Article 19(1)(g) thereof [86] Such a notification is not liable to be quashed as being violative of the fundamental rights Whether the drug should be prohibited or not on the ground that it was injurious to the public health is essentially a matter dealing with the policy decision of the State and hence can not also be challenged as violative of the principles of natural justice [87]

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85 *M/s E Merck (India) Ltd* v *Union of India*, AIR 2001 Delhi 326
86 *Systopic Laboratories (Pvt) Ltd* v *Dr Prem Gupta*, AIR 1994 SC 205
87 *Uni-San Pharmaceuticals* v *Union of India*, AIR 2002 Kerala 72

In *Amery Pharmaceuticals* v. *State of Rajasthan*,[88] a drug was purchased by the Drug Inspector for the purpose of sampling it under the provisions of the Act. When the sample was tested by the Government Analyst, he reported that the drug was 'misbranded, adulterated and spurious'. Section 27 of the Act renders a person who manufactures for sale or for distribution, or who sells or stocks or offers for sale any adulterated or spurious drug, liable to a punishment with imprisonment for a term which shall not be less than one year though a maximum is provided.

The appellants contended that there was non-compliance with the provision contained in Section 23(4)(iii) of the Act since the Inspector did not deliver one portion of the sample to the appellants. Section 23 empowers an Inspector to take sample of any drug for the purpose of test or analysis but prescribes a procedure to be followed. Non-supply of one portion of the sample to the appellant has resulted in depriving him of a valuable right to test the correctness of the report of the Government Analyst. Rejecting the contention, the Court held that the appellant could have availed himself of the remedy indicated in Section 23(4) itself by requesting the Court to send the other portion of the sample remaining in the Court to be tested at the Central Drugs Laboratory. The Court observed:

> When the provisions can be interpreted in such a way, it is not congenial to the interest of criminal justice to acquit the manufacturers of forbidden medicines or drugs on a technical ground that there is a lacuna in the legislation by not supplying copy of the report of the Government Analyst to the manufacturer in certain situations. To adopt the course of acquitting such offending manufacturers only on the legislative lacuna (if at all it is lacuna) would be hazardous to public health

88. AIR 2001 SC 1303.

> and the lives of the patients to whom drugs are prescribed by medical practitioners would be in jeopardy.[89]

In *Cadila Health Care Ltd.* v. *Cadila Pharmaceuticals Ltd*,[90] the apex Court was to decide as to how far the similarity in trade marks between two medicinal products e.g. 'Flacitab' and 'Falcigo', could lead to deception or causing confusion among consumers. The Government referred to different judgments in which two similar marks like 'Glucovita' and 'Gluvita', 'Amritdhara' and 'Lakshmandhara', 'Erectiks', and 'Erector', 'Navaratna' and 'Navaratna Kalpa', 'Protovit' and 'Dropovit' etc. raised confusion. The Court observed:

> While confusion in the case of non-medicinal products may only cause economic loss to the plaintiff, confusion between the two medicinal products may have disastrous effect on health and in some cases life itself. Stringent measures should be adopted specially where medicines are the medicines of last resort, as any confusion in such medicines may be fatal or could have disastrous effects... Confusion between medicinal products may, therefore, be life threatening, not merely inconvenient.

The Court held that in case of medicinal products there can be no provisions for mistake since even a possibility of mistake may prove to be fatal. Therefore, strict measures to prevent any confusion arising from similarity of marks among medicines are required to be taken. The Court referred to Section 17B of the Act under which an imitation or resemblance of another drug in a manner likely to deceive is regarded as a spurious drug. That being so 'it is but proper that before granting permission to manufacture a drug under a brand name the authority under the Act is satisfied that there will be no confusion or deception in the market'.

This decision of the Supreme Court is important because the incorrect intake of medicine may even result in loss of life or other serious health problems.

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89. *Id.* at 1309.
90. AIR 2001 SC 1952.

Article 21 of the Constitution guarantees right to life and the apex Court has interpreted the guarantee to cover a life with normal amenities ensuring good living which include medical attention, life free from diseases and longevity. On account of both want of appropriate enforcement of the law as also strict measures necessary to eradicate the existing evils, the fundamental right to life is not available to the citizens of the country. Moreover, Article 47 lays down the improvement of public health and prohibition of drugs injurious to health as one of the primary duties of the State. These are indispensable to the very physical existence of the community. The health care of citizens is a problem with various facets. It involves an ever growing and changing challenge. Since the nature of problem is ever changing one and one can not have a fixed solution, the judicial process is not an appropriate forum for handling such matters. However, the Central Government, on the basis of expert advice, can indeed adopt an approved national policy and prescribe an adequate number of formulations which would on the whole meet the requirement of the people at large. State is, no doubt, anxious to improve the general condition and is willing to exercise adequate control. Parliament has also enhanced the penalties with a view to ensure elimination of injurious drugs and maintenance of the quality and standard of drug preparations. There is, however, no scope for complacency in this field and constant and regular attention has to be paid. A healthy body is the basic foundation for all human activities. In a welfare State, therefore, it is the obligation of the State to ensure the creation and the sustaining of conditions congenial to good health.[91]

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91. *See Vincent Panikurlangara* v. *Union of India*, AIR 1987 SC 990.

6.10 The Factories Act, 1948

The Factories Act, 1948[92] (hereinafter 'the Act') was enacted with the object of ensuring adequate safety measures[93] and promoting the health[94] and welfare[95] of the workers employed in factories. To have maximum production and productivity, an appropriate work culture conducive to safety, health and happiness of workers needs to be ensured.

The Act is enforced by State Governments through their Factory Inspectorates. The Act also empowers the State Governments to frame rules so that the local conditions prevailing in the State are appropriately reflected in the enforcement. There are provisions for statutory health surveys and appointment of safety officers in large factories.

Substantial technological innovation in the industrial field and coming up of several chemical industries which deal with hazardous and toxic substances, have created problems of industrial safety. They have led to varied occupational health hazards. In view of these developments, the Act was amended by Act 20 of 1987 providing specifically for the safeguards to be adopted against the use and handling of hazardous substances and the laying down of emergency standards and measures. A new Chapter IVA was added in the Act dealing with 'provisions relating to hazardous processes'.[96] It includes

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92. Act 63 of 1948. As amended by Acts 40 of 1949; 3 of 1951; 25 of 1954; 51 of 1970; 94 of 1976; and 20 of 1987.
93. Eye protection, control of explosive and inflammable dusts, etc.
94. Cleanliness, ventilation and temperature, dangerous dusts and fumes, lighting etc.
95. Washing facilities, first-aid, canteens, shelter rooms etc.
96. 'Hazardous process' means any process or activity in relation to an industry specified in the First Schedule where, unless special care is taken, raw materials used therein or the intermediate or finished products, bye-products, wastes or effluents thereof would - (i) cause material impairment to the health of the persons engaged in or connected therewith, or (ii) result in the pollution of the general environment [Section 2(cb)].

procedures for siting of hazardous industries to ensure that hazardous and polluting industries are not set up in areas where they can cause adverse effects on the general public Provision has also been made for the workers' participation in safety management.

The State Government has been empowered to frame rules for effective arrangements in every factory for the treatment of wastes and effluents resulting from manufacturing process, so as to render them innocuous, and for their disposal.[97] In case of dust or fume or other impurity of such a nature, effective measures have to be taken to prevent its inhalation and accumulation [98] If the manufacturing process in any factory produces dust, gas, fume or vapour likely to explode on ignition, all practicable measures ought to be taken to prevent such explosion and if at all the plant or machinery could produce explosion, to restrict the spread and effects of the explosion Where any part of the plant or machinery contains any explosive or inflammable gas or vapour under pressure greater than atmospheric pressure, that part ought not to be opened except in accordance with the prescribed safety guidelines Moreover, if any operation involves the application of heat, any explosive or inflammable substance has to be removed from the premises to prevent any risk of igniting the substance [99] Necessary measures have to be taken to prevent out break of fire and its spread [100]

Initial location or expansion of a factory involving hazardous process is to be determined on the recommendation of a Site Appraisal Committee appointed by the State Government under the Chairmanship of Chief Inspector of the

97. Section 12.
98. Section 14.
99. Section 37.
100. Section 38.

State.[101] Disclosure of information by the occupier regarding dangers, including health hazards and the measures to overcome such hazards; health and safety of workers; wastes and the manner of their disposal; on-site emergency plan; and measures for the handling, use, transportation and storage of hazardous substances has been made compulsory.[102] Accurate and up-to-date health and medical records of workers exposed to any chemical, toxic or other harmful substances have to be maintained.[103] The Central Government is empowered to appoint an Inquiry Committee to inquire into the standards of health and safety and make recommendations. The maximum permissible limits of exposure to chemical and toxic substances have been laid down in the Second Schedule.[104] There are provisions for workers' participation in safety management[105] and their right of being warned about imminent danger.[106] The State Government has been empowered to make special rules in respect of dangerous operations.[107]

Contravention of the provisions of Chapter IVA or the rules made thereunder, is punishable with imprisonment for a term which may extend to seven years and with fine which may extend to two lakh rupees, and in case the contravention continues, with additional fine which may extend to five thousand rupees for every day. If the failure or contravention continues beyond a period of one year after the date of conviction, the offender is punishable with imprisonment for a term which may extend to ten years.[108] However, if the

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101. *See* Section 41A.
102. Section 41B.
103. Section 41C.
104. Section 41F.
105. Section 41G.
106. Section 41H.
107. Section 87.
108. Section 96A.

occupier or manager of a factory is charged with an offence under the Act, he is entitled to prove to the satisfaction of the Court that he exercised due deligence and some other person committed the offence in question without his knowledge, consent or connivance. In such a situation, 'that other person' is convicted of the offence provided there is examination on oath, cross-examination and the actual offender is produced before the Court within three months from the date of charge.[109] Previous sanction in writing of an Inspector is necessary for taking cognizance of any offence and no Court below the rank of a Magistrate of the first class shall be competent to try the case under the Act.[110] There is a right of appeal to the appellate authority.

Therefore, the Act, as amended in 1987, contains significant provisions in relation to factories engaged in hazardous processes[111] regarding the use and handling of hazardous substances, the siting of such industries, safeguards to be adopted, power of the State Government to make rules in this behalf and the appointment of a Site Appraisal Committee under the Chairmanship of the Chief Inspector of the State. These provisions are aimed at ensuring not only the safety and health of workers engaged in hazardous processes but also the people living in the vicinity as well as protection of the general environment. However, the provisions contained therein have been criticised on the following grounds:[112]

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109. Section 101.
110. Section 105.
111. For a list of industries involving hazardous processes, *see* First Schedule to the Act.
112. *See* N.S. Chandrasekharan, *Hazardous Processes and Substances: Legal Control*, C.U.L.R., 74-81 (1995).

1. The State Government has been authorised to frame rules requiring submission of plans of factories, obtaining previous permission for the site on which the factory is to be situated, construction and extension of the factory and registration and licensing of factories. However, these provisions do not contain any guidelines on the matters to be taken into account for deciding whether the permission applied for is to be granted or not.

2. The Site Appraisal Committee has only an advisory role. It makes recommendations to the State Government. In view of the priorities of the State to achieve the goal of economic development through industrialisation, one can not rule out the possibility of the State not paying adequate attention to the risk factors in location of industries. The consequences may be disastrous. An analysis of the provisions of the Act reveals that the control mechanism envisaged therein is inadequate.

3. Even the appointment of Site Appraisal Committee is not mandatory. The provision contained in Section 41A(1) in this regard is only enabling in nature i.e. 'the State Government may, for purposes of advising it... appoint a Site Appraisal Committee'. The recommendations of the Committee are not binding on the State. In fact, the very structure of the Committee is defective. Instead of a Committee which can act independently and effectively to protect the environment, what one sees is a Committee designed to protect the interest of the Government. It is the Government which appoints the Chairman and members of the Committee. They are to be appointed from departments of the Government and from agencies dominated by Government. The power to co-opt the members has been conferred on the Government. The Committee, obviously, requires a change in its

structure, procedure and powers Its decisions should be made binding on the authorities concerned The Act, therefore, requires amendment There is need to make the Committee a strong and effective instrument of controlling hazardous substances and processes

4 The Act does not provide for mandatory environmental impact assessment The procedure for sanctioning location of the factory lacks openness and there is no involvement of the public in the process There is no provision for taking into account the objections from general public before siting the factory The procedure should include open environmental impact assessment with public participation

5 The main thrust of the provisions casting a general duty of care on the occupier of the factory and on persons dealing in articles to be used in factory, is on the protection of workers and not on protection of the public in general from unsafe and polluted environment

6 There are provisions for furnishing of information to the people so that they can know about the risks and dangers involved in factories engaged in hazardous processes and can adopt safety measures in case of an emergency These are welcome provisions However, these provisions have their emphasis on the remedial measures rather than preventive ones

6.11 The Industries (Development and Regulation) Act, 1951

The Industries (Development and Regulation) Act, 1951[113] (hereinafter 'the Act') was enacted with the object of bringing the development and regulation

113 Act 65 of 1951 As amended by Acts 26 of 1953, 71 of 1956, 36 of 1957, 51 of 1961, 37 of 1962, 6 of 1965, 72 of 1971, 67 of 1973, 32 of 1974, 17 of 1979, 4 of 1984, and 4 of 1986

of a number of important industries under the control of Central Government. The activities of these industries affect the country as a whole and their development must be governed by economic factors of all-India import. The Act confers wide powers on the Central Government in respect of licensing of new undertakings, making rules for the registration of existing undertakings, regulating the production and development of Scheduled industries and consulting the Provincial Governments on these matters. The Act provides for the constitution of a Central Advisory Council,[114] prior consultation with which is obligatory before the Central Government takes certain measures such as the revocation of a licence or taking over the control and management of any industrial concern. Development Councils[115] have also to be constituted for the purpose of performing such functions which may increase the efficiency and productivity of the Scheduled industries.

Contravention of the provisions dealing with registration or licensing conditions, or any direction issued or order made or rules promulgated, is punishable with imprisonment which may extend to six months or with fine which may extend to five thousand rupees or with both and in case the contravention continues, with an additional fine which may extend to five hundred rupees for every day.[116] Making any false statement or furnishing any false information is made punishable with imprisonment which may extend to three months or with fine which may extend to two thousand rupees, or

114. Section 5.
115. Section 6.
116. Section 24.

both.[117] No Court below the rank of a Judicial Magistrate of the first class is competent to try the offence under the Act.[118]

The First Schedule to the Act lists 38 industries, the control of which by the Central Government has been considered to be expedient in public interest. These industries include metallurgical industries, fuels, boilers and steam, fertilizers, chemicals (other than fertilizers), dye-stuffs, drugs and pharmaceuticals, textiles, paper and pulp including paper products, food processing industries, cosmetics and rubber goods etc. The proper development of these industries is important for the economic development of the country. If the investigation reveals that any of the Scheduled industry has to close down due to serious difficulties, for example, in production and employment, or is being managed in a manner highly detrimental to the Scheduled industry or public interest, the Central Government has been empowered to take action for its rehabilitation including the power to take over its management. During the period of take over, the Government may invest public funds in such undertaking so as to ensure continued efficient management of the undertaking at the end of the period of take over. In addition, the Government may resort to the further course of action i.e. the sale of the undertaking at a reserve or higher price or reconstruction of the company. Thus, the provisions of the Act are significant for the proper development of Scheduled industries which contribute substantially to the Gross National Product of the country and provide employment to millions of people.

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117. Section 24A.
118. Section 29.

6.12 The Mines Act, 1952

The Mines Act, 1952[119] (hereinafter 'the Act') was passed with a view to amending and consolidating the law relating to the regulation of labour and safety in mines. It basically regulates the working conditions in mines. Provisions relating to health, safety and comfort of workers are largely on the lines of those contained in the Factories Act, 1948. Significant provisions relate to arrangements for drinking water, latrines, urinals etc.; grant of holidays with pay; rates of payment; prohibition on the presence of children below 18 years in mines; prohibition on employment of women between hours of 10 p.m. and 5 a.m.; enquiry regarding causes of notified diseases; first-aid appliances; appointment of inspectors and certifying surgeons; occupational health surveys; constitution of committees; and duties of owners and managers of mines. The Central Government has power to make regulations and rules under the Act.[120]

Contravention of the provisions may invite punishment of imprisonment or fine or both. Different scales of punishment have been provided for different violations. Maximum imprisonment may extend to two years and fine to five thousand rupees. There is a provision for enhanced penalty for subsequent offence. Prosecution should be instituted at the instance of the Chief Inspector or District Magistrate or an Inspector authorised in this behalf. The owner, agent or manager of a mine may plead that he exercised due deligence and some other person committed the offence in question without his knowledge, consent or connivance. In such a situation, that other person shall be liable

119. Act 35 of 1952. As amended by Acts 42 of 1953; 62 of 1959; 25 of 1968; and 42 of 1983.
120. *See* Mines Rules, 1955.

provided he is produced within three months from the date appointed for the hearing of the case and the case is proved against him. No Court below the rank of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall be competent to try the offence under the Act.

'Mine' means any excavation for the purpose of searching or obtaining minerals and includes a number of activities in this regard.[121] Since negligence and recklessness in carrying on these activities may assume dangerous proportions, the Chief Inspector and Inspectors appointed under the Act have to ensure that the provisions of the Act and regulations, rules, bye-laws and orders made thereunder are strictly observed by every owner, agent or manager of a mine. Where due to any matter, thing or practice within the mine, there is a danger to the life or safety of any person employed, the Chief Inspector or an Inspector may, by notice require the same to be remedied and in case of an urgent or immediate danger, by order prohibit the employment in or about the mine or any part thereof. There are provisions for the notice of accidents to be given to the concerned authority by the owner, agent or manager, inquiry into the causes of accidents, notice of certain diseases and investigation into the causes of disease.

6.13 The Inflammable Substances Act, 1952

The Inflammable Substances Act, 1952[122] (hereinafter 'the Act') was passed with the object of declaring certain substances to be dangerously inflammable and providing for the regulation of their import, transport, storage and

121. *See* Section 2(j).
122. Act 20 of 1952. As amended by the Repealing and Amending Act, 1957 (36 of 1957).

production by applying thereto the Petroleum Act, 1934 and the rules made thereunder. Acetone, calcium phosphate, carbide of calcium, cinematograph films having nitro-cellulose base, ethyl alcohol, methyl alcohol and wood naphtha have been specifically declared to be dangerously inflammable.[123]

6.14 The Prevention of Food Adulteration Act, 1954

Food is the basic necessity to sustain life and pure, fresh and healthy food is necessary for the health of the people. The widespread adulteration of food-stuffs in India by flavouring and colouring matters; heavy metals; coiling materials and preservatives; mixing of inferior or cheaper substances and any poisonous or deleterious substances resulted in the enactment of the Prevention of Food Adulteration Act, 1954[124] (hereinafter 'the Act') by the Government of India to give relief to the consumers. Prior to the enactment of this central legislation on the subject, different laws existed in different States in India for the prevention of adulteration of food-stuffs, but they lacked uniformity. In 1937, a Committee appointed by the Central Advisory Board of Health recommended for the adoption of an all India legislation on the subject. 'Adulteration of food-stuffs and other goods' was included in the Concurrent List as item no. 18 of List III of the 7th Schedule to the Constitution and the Central Government enacted the legislation which has replaced all local food adulteration laws. The purpose of the Act is 'to make provision for the prevention of adulteration of food'.[125]

123. Section 3.
124. Act 37 of 1954. As amended by Acts 49 of 1964; 41 of 1971; 34 of 1976; 70 of 1986; and 22 of 1995.
125. The Preamble.

The definition of an 'adulterated' article of food includes, among others, the following [126]

i if the article had been prepared, packed or kept under insanitary conditions whereby it has become contaminated or injurious to health,

ii if the article consists wholly or in part any filthy, putrid, rotten, decomposed or diseased animal or vegetable substance or is insectinfested or is otherwise unfit for human consumption,

iii if the article contains any poisonous or other ingredient which renders it injurious to health,

iv if the container of the article is composed, whether wholly or in part, of any poisonous or deleterious substance which renders its contents injurious to health,

v if any colouring matter other than that prescribed in respect thereof is present in the article or if the amount of colouring matter is not within the prescribed limits of variability, or

vi if the article contains any prohibited preservative or permitted preservative in excess of the prescribed limits

An article of food is deemed to be 'misbranded' if it is so coloured, flavoured or coated, powdered or polished that the fact of the article being damaged is concealed or if the article is made to appear better or of greater value than it really is,[127] or if it contains any artificial flavouring, artificial colouring or chemical preservative, without a declaratory label stating that fact, or in

126 *See* Section 2(ia)
127 Section 2(ix)(d)

contravention of the requirements of the Act or rules made thereunder.[128] The word 'unwholesome' and 'noxious' when used in relation to an article of food mean respectively that the article is harmful to health or repugnant to human use.[129]

There are provisions for the constitution of a Central Committee for Food Standards to advise the Central Government and the State Governments on matters relating to administration of the Act;[130] appointment of a Secretary and other staff to the Committee;[131] establishment of one or more Central Food Laboratory or Laboratories for analysis or tests of the samples of articles of food;[132] appointment of public analysts[133] and food inspectors.[134] The powers of food inspectors have been specified[135] and the procedure to be followed by food inspectors while taking a sample of food for analysis has been provided.[136] The Act also authorises a purchaser or a recognised consumer association to have an article of food analysed by the public analyst on payment of such fees as may be prescribed.[137] Moreover, the Central or State Government may, by notification in the Official Gazette, require medical practitioners to report all cases of food poisoning coming within their cognizance, to such officer as may be specified.[138]

Different scales of punishment have been provided for different contraventions including mandatory minimum imprisonment and fine. The maximum

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128. Section 2(ix)(j).
129. Section 2(xv).
130. Section 3.
131. Section 3A.
132. Section 4.
133. Section 8.
134. Section 9.
135. Section 10.
136. Section 11.
137. Section 12.
138. Section 15.

punishment is imprisonment for a term which shall not be less than three years but which may extend to term of life and fine which shall not be less than five thousand rupees in case an article of food or adulterant is such that when consumed by any person is likely to cause his death or grievous hurt. Subsequent conviction may result in the cancellation of licence and publication of offender's name, address, the offence and penalty imposed in such newspaper as the Court may direct.[139] The Court has power to try cases under the Act summarily provided the sentence of imprisonment imposed does not exceed one year.[140]

The penal provisions apply to companies also and any person incharge of and responsible to the company for the conduct of its business shall be deemed to be guilty of the offence and liable to punishment provided he proves that the offence was committed without his knowledge and that he exercised all due deligence to prevent the commission of the offence.[141] No prosecution for an offence under the Act can be instituted except with the written consent of the Central Government or the State Government and no Court below the rank of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall be competent to try any offence under the Act.[142] The Central Government has power to give directions[143] and make rules[144] for the purpose of carrying out the provisions of the Act. In respect of the matters not falling within the

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139. Section 16.
140. Section 16A.
141. Section 17.
142. Section 20.
143. Section 22A.
144. Section 23. *See* The Prevention of Food Adulteration Rules, 1955.

purview of rule making power of the Central Government, the State Government has been empowered to make rules [145]

In *Jai Narain* v *The Municipal Corporatio of Delhi*,[146] the Court held that a preparation in which a non-permissible colouring matter has been used is an adulterated food, the sale of which is prohibited by Section 7 Section 16 provides for a minimum sentence of imprisonment for not less than six months *inter alia* for the offence of selling adulterated food The policy of Section 16, therefore, is clearly to impose a sentence not less than that provided therein

Fact that Sections 7 and 16 of the Act, read together, impose inflexible minimum sentence of six months' rigorous imprisonment on offenders guilty of sale of adulterated food does not by itself render those provisions unconstitutional [147] In the words of Krishna Iyer, J

> Let us be clear about the basics Policy is for Parliament, constitutionality for the Court Protection of public health and regulation of noxious trade belong to the police power of the State and legislation like the Prevention of Food Adulteration Act is of that genre [148]

In *Municipal Corporation of Delhi* v *Mohd Kareem*,[149] the Court held that the Act makes a distinction between adulteration of food and misbranding of food Although both offences are dealt with under the same provision of law, namely, Section 7/16, they constitute different offences requiring proof of different facts

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145 Section 24
146 AIR 1972 SC 2607
147 *Inderjeet* v *State of U P*, AIR 1979 SC 1867
148 *Id* at 1868
149 1974 Cri L J 572 (Delhi)

In *State of U.P.* v. *Hanif*,[150] the Court held that it is open to the State Government to appoint more than one Public Analyst to any local area or areas and both would co-exist to have power and jurisdiction to analyse an article or articles of food covered under the Act to find whether the same is adulterated The Court further observed that it is not the law that the evidence of Food Inspector must necessarily need corroboration from independent witnesses The evidence of the Food Inspector is not inherently suspected, nor be rejected on that ground. He discharges the public function in purchasing an article of food for analysis and if the article of food so purchased in the manner prescribed under the Act is found adulterated, he is required to take action as per law He discharges public duty

As regards offences by companies, the apex Court in *R. Banerjee* v. *H D. Dubey*[151] held

> It is crystal clear from the scheme of Section 17 that where a company has committed an offence under the Act, the person nominated under sub-section (2) to be in charge of, and responsible to, the company for the conduct of its business shall be proceeded against unless it is shown that the offence was committed with the consent / connivance / negligence of any other Director, Manager, Secretary or Officer of the company in which case the said person can also be proceeded against and punished for the commission of the said offence It is only where no person has been nominated under sub-section (2) of Section 17 that every person, who at the time of the commission of the offence was incharge of and was responsible to the company for the conduct of its business can be proceeded against and punished under the law

The evil of food adulteration has become so wide spread and persistent in our society that a concerted and determined effort is needed to curb this anti-social

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150 AIR 1992 SC 1121.
151. AIR 1992 SC 1168

evil The Act has been enacted to provide an all-India legislation on the subject and to cope up with the increasing tendencies to indulge in adulteration Deterrent punishments have been provided for those who are involved in the supply of sub-standard or adulterated food containing harmful poisonous substances which constitute a serious threat to the health of the general public The Act is basically a consumer protection legislation which is designed to prevent adulteration of food-stuffs Keeping in view the gravity of the problem and the danger it poses to the health of the nation, the provisions of the Act and the rules made thereunder require strict implementation In *Municipal Corporation of Delhi* v *Surja Ram*,[152] the Court observed that the officers enforcing anti-food adulteration measures should realise that on their discharge of the solemn duty imposed on them by the statute, depends the health of the entire nation, and any lapse in vigilance on their part or in conscientious discharge of their duty is likely to affect the health of the whole society including their own children

6.15 The Mines and Minerals (Regulation and Development) Act, 1957

The Mines and Minerals (Regulation and Development) Act, 1957[153] (hereinafter 'the Act'), which replaces the Act of 1948,[154] provides for the development and regulation of mines and minerals[155] under the control of the Central Government The activities are to be carried on in accordance with the terms and conditions of a prospecting licence[156] or, as the case may be, a

152 1965(2) Cri L J 571

153 Act 67 of 1957 As amended by Acts 15 of 1968, 56 of 1972, 37 of 1986, 16 of 1987, 25 of 1994 and 38 of 1999

154 The Mines and Minerals (Regulation and Development) Act, 1948 (53 of 1948)

155 'Minerals' includes all minerals except mineral oils [Section 3(a)]

156 'Prospecting licence' means a licence granted for the purpose of undertaking prospecting operations [Section 3(g)]

mining lease,[157] granted under the Act and the rules made thereunder. Specific reference to environment and pollution has been made. Prospecting licences or mining leases may be terminated by the Central Government, after consultation with the State Government, if it is expedient in the interest of, among others, preservation of natural environment and prevention of pollution.[158]

The Central Government has power to make rules in respect of several matters including the manner in which rehabilitation of flora and other vegetation such as trees, shrubs and the like destroyed by reason of any prospecting or mining operations shall be made.[159] In respect of minor minerals,[160] the State Government has a similar power.[161] The Central Government is under a duty to take all necessary steps for the conservation and systematic development of minerals in India and for the protection of environment by preventing or controlling any pollution which may be caused by prospecting or mining operations. For the performance of this duty, it may make rules including rules for the disposal or discharge of waste slime or tailings arising from any mining or metallurgical operations carried out in a mine.[162]

Violation of terms and conditions of a reconnaissance permit[163] or prospecting licence or a mining lease has been made punishable with imprisonment for a

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157. 'Mining lease' means a lease granted for the purpose of undertaking mining operations, and includes a sub-lease granted for such purpose. [Section 3(c)].
158. Section 4A.
159. Section 13(qq).
160. 'Minor minerals' means building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes, and any other mineral which the Central Government may, by notification in the Official Gazette, declare to be a minor mineral. [Section 3(e)].
161. Section 15(i).
162. Section 18(k). *See* Mineral Conservation and Development Rules, 1988.
163. 'Reconnaissance permit' means a permit granted for the purpose of undertaking reconnaissance operations'. [Section 3(h-b)]. And 'reconnaissance operations' means any operations undertaken for preliminary prospecting of a mineral through regional, aerial, geophysical or geochemical surveys and geological mapping, but does not include pitting, trenching, drilling (except drilling of boreholes on a grid specified from time to time by the Central Government) or sub-surface excavation. [Section 3(h-a)].

term which may extend to two years or with fine which may extend to twenty five thousand rupees or both.[164] Contravention of other provisions of the Act is punishable with imprisonment for a term which may extend to one year or with fine which may extend to five thousand rupees or both and in case, the contravention continues, with an additional fine which may extend to five hundred rupees for every day.[165] Any officer authorised by the Government has power to enter, search and inspect any mine or stock of minerals lying at any mine and relevant documents. The Central Government has power to revise any order made by the State Government or other authority under the Act.[166]

In *Tarun Bharat Sangh* v. *Union of India*,[167] Tarun Bharat Sangh, a voluntary organisation, approached the Government complaining that widespread illegal mining activity was going on in the area declared as 'tiger reserve' in Alwar district of Rajasthan. In the interest of ecology, environment and rule of law, it said, the activity should stop. The Court, after thorough interpretation of the enacted laws, came to the conclusion that the State Government is empowered not only to declare any forest land as a protected forest but also any waste land as such not only to protect the existing forest but also to bring waste lands under schemes of afforestation. Once declared as protected forest, the distinction between forest land and waste land disappears. In the said area, no non-forest activity can be carried on without the prior approval of the Central Government. The mining activity is certainly a non-forest activity and no mining operation of whatever nature can be carried on in the protected area.

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164. Section 21(1).
165. Section 21(2).
166. Section 30.
167. 1993 Supp (3) SCC 115.

The grant of mining leases / licences and their renewal by the State Government, without obtaining the prior approval of the Central Government, is contrary to law The Court, therefore, held that mining activity in the area should stop forthwith May be that this will have the effect of bringing to halt the activity involving a good amount of capital and a large number of workers

In *Tata Iron & Steel Co. Ltd.* v. *Union of India*,[168] the apex Court observed that from the scheme of the Act it is clear that the Central Government is vested with the discretion to determine the policy regarding the grant or renewal of leases Since these issues involve considerably high stakes, both in terms of commercial value and concept of mineral development and the consequent national interest, those likely to be affected and those who can legitimately have a stake in the proper formulation of such a vital policy, can be heard While the Central Government exercises its discretion, the capacity of an industry to effectively exploit the ore, will be a predominant consideration

If on an application made by the petitioner for renewal of his lease, the State Government refuses to renew the same, the petitioner is entitled to file a revision application to the Central Government for revision of the order Such an application has to be made within the prescribed time and accompanied by prescribed fee However, revision in renewal cases should not be rejected on the ground of delay, unless special reasons for not condoning delay exist Unless there are special reasons, delay should be condoned [169]

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168 AIR 1996 SC 2462, *See also Indian Metals & Ferro Alloys Ltd* v *Union of India*, AIR 1991 SC 818

169 *See M/s Harkarand Das Mangilal* v *Union of India*, AIR 1981 SC 1734, *Shri Nand Lal Jain* v *State of Bihar*, (1980) 3 SCC 317, *Tata Chemicals Ltd* v *Union of India*, AIR 2001 Gujarat 154

The royalty to be paid in respect of mining lease is fixed under the Act of 1957 which happens to be a Central legislation and provides for the regulation of mines and development of minerals under the control of the Union. On a plain reading of the language of the statute (Section 2) and upon a declaration as to expediency of Union control under Section 2, the Central Government alone has the power to legislate in regard to regulation of mines and mineral development. On reference to Section 9 which provides for royalties in respect of mining lease the field being occupied, question of empowerment of the State Government to collect royalty does not arise. Section 9 of the Act of 1957 is within the legislative competence of Parliament both under Entry 54 and Entry 97 of the Union List.[170]

The mining process is a potential source of release of heavy metals or pollutants into the environment. Rain or flood-waters can quickly carry contaminant-laden tailings from mining operations into lakes or other water ways. Because these contaminants are heavy and persistent, they often collect in sediments at the bottom of waterways. They can pose a risk to fish and birds that feed in contaminated areas, as well as to drinking water supplies. No doubt, mineral extraction is an important commercial activity but it carries with it the problem of mining and quarrying waste. The activities of mineral extraction, mining and quarrying and the production of waste from these activities have severe environmental consequences. The Act specifically addresses the issues of preservation of environment, prevention of pollution,

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170. *See Saurashtra Cement and Chemical Industries* v. *Union of India*, AIR 2001 SC 8. *See also Baijnath Kedia* v. *State of Bihar*, AIR 1970 SC 1436; *Thressiamma Jacob* v. *Geologist, Dept. of Mining and Geology, Palghat* (FB), AIR 2000 Kerala 300.

rehabilitation of degraded environment and disposal of waste resulting from prospecting or mining operations.

6.16 The Offshore Areas Mineral (Development and Regulation) Act, 2002

For the development and regulation of mineral resources in the territorial waters, continental shelf, exclusive economic zone and other maritime zones of India, the Parliament has enacted the Offshore Areas Mineral (Development and Regulation) Act, 2002.[171] By this legislation, the regulation of mines and the development of minerals in offshore areas have been brought under the control of the Union. Any reconnaissance operation, exploration operation or production operation in the offshore areas can not be carried on except in accordance with the prescribed terms and conditions of a permit, licence or lease granted under the Act and the rules made thereunder.[172] The Central Government may take certain measures for prevention and control of pollution and protection of marine environment due to the activities in the offshore areas and the permittee, licensee or lessee has to comply with the directions of the Central Government or the administering authority in this regard [173]

Contravention of the provisions of the Act or rules made thereunder may invite penal as well as civil liability. Penal liability may extend to imprisonment for a term of five years and fine upto one crore rupees.[174] The civil liability for contravention of general terms and conditions includes a mandatory minimum

171. Act NO. 17 of 2003.
172. Section 5.
173. *See* Sections 20 & 21.
174. Section 23.

amount of not less than five lakh rupees and which may extend to one crore rupees to be paid to the Central Government. For contravention of particular terms and conditions, an additional amount of not less than one lakh rupees and which may extend to ten lakh rupees has to be paid.[175] Thus, the provisions of the Act providing for deterrent punishment and fine are of special significance so far as the safety and health of persons, prevention and control of pollution and protection of marine environment due to activities in the offshore areas are concerned.

6.17 Code of Criminal Procedure, 1973

The provisions of the Code of Criminal Procedure, 1973[176] (hereinafter to be referred as 'Cr.P.C.' or the 'Code') can be invoked to control environmental pollution through different activities and substances resulting in public nuisance. Chapter X, Part B[177] and Part C[178] provide an independent, speedy and summary remedy against public nuisance. Chapter X, Part B provides the procedure for the abatement of nuisance in ordinary cases and part C in urgent cases of nuisance.

Section 133 Cr. P. C.[179] empowers an Executive Magistrate to pass a conditional order for the removal of public nuisance within a fixed period of

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175. Section 28.
176. Act No. 2 of 1974.
177. Sections 133-143.
178. Section 144.
179. Section 133 reads:
    1. Whenever a District Magistrate or a Sub-Divisional Magistrate or any other Executive Magistrate specially empowered in this behalf by the State Government on receiving the report of a Police Officer or other information and on taking such evidence (if any) as he thinks fit, considers--
        a. that any unlawful obstruction or nuisance should be removed from any public place or from any way, river or channel which is or may be lawfully used by the public; or
        b. that the conduct of any trade or occupation, or the keeping of any goods or merchandise, is injurious to the health or physical comfort of the community, and that in consequence such trade or occupation should be prohibited or regulated or such goods or merchandise should be removed or the keeping thereof regulated; or

time He may act on the report of a Police Officer or other information and on taking such evidence (if any) as he thinks fit The order may require the person causing nuisance, to appear before the Executive Magistrate at a time and place to be fixed by the order and show cause why the order should not be made absolute

The order duly made by a Magistrate under Section 133, Cr P C may not be called in question in any Civil Court [180]

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c that the construction of any building, or the disposal of any substance, as is likely to occasion conflagration or explosion, should be prevented or stopped, or

d that any building, tent or structure, or, any tree is in such a condition that it is likely to fall and thereby cause injury to persons living or carrying on business in the neighbourhood or passing by, and that in consequence the removal, repair or support of such building, tent or structure, or the removal or support of such tree, is necessary, or

e that any tank, well or excavation adjacent to any such way or public place should be fenced in such manner as to prevent danger arising to the public, or

f that any dangerous animal should be destroyed, confined or otherwise disposed of,

such Magistrate may make a conditional order requiring the person causing such obstruction or nuisance, or carrying on such trade or occupation, or keeping any such goods or merchandise, or owning, possessing or controlling such building, tent, structure, substance, tank, well or excavation, or owning or possessing such animal or tree, within a time to be fixed in the order --

(i) to remove such obstruction or nuisance, or

(ii) to desist from carrying on, or to remove or regulate in such manner as may be directed, such trade or occupation, or to remove such goods or merchandise, or to regulate the keeping thereof in such manner as may be directed, or

(iii) to prevent or stop the construction of such building, or to alter the disposal of such substance, or

(iv) to remove, repair or support such building, tent or structure or to remove or support such trees, or

(v) to fence such tank, well or excavation, or

(vi) to destroy, confine or dispose of such dangerous animal in the manner provided in the said order,

or, if he objects so to do, to appear before himself or some other Executive Magistrate subordinate to him at a time and place to be fixed by the order, and show cause, in the manner hereinafter provided, why the order should not be made absolute

2. No order duly made by a Magistrate under this section shall be called in question in any Civil Court

Explanation :- A "public place" includes also property belonging to the State, camping grounds and grounds left unoccupied for sanitary or recreative purposes

180 Section 133(2)

The person against whom such order is issued has to perform the act as directed in the order or appear in accordance with such order and show cause against the same.[181] If such person does not perform such act or appear and show cause, he is liable to the penalty prescribed in that behalf in Section 188 of the Indian Penal Code, 1860 and the order shall be made absolute.[182]

If the person against whom an order under Section 133, Cr.P.C. is made, appears and shows cause against the order, the Magistrate shall take evidence in the matter as in a summons case. If the Magistrate is satisfied that the order is reasonable and proper, the order shall be made absolute.[183]

When an order has been made absolute, the Magistrate should, through notice, further require the person against whom the order was issued, to perform the act as directed. The Magistrate should also inform him that in case of disobedience, he would be liable to the penalty provided by Section 188 of Indian Penal Code. Even thereafter, if such act is not performed within the time fixed, the Magistrate may cause it to be performed and may recover the costs

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181. Section 135.
182. Section 136. Section 188, I.P.C. 1860 reads -- "Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management disobeys such direction,
shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any persons lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both;
and if such disobedience causes or tends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.
Explanation -- It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.
183. Section 138.

of performing it by the attachment and sale of his movable or immovable property.[184]

Repetition or continuance of a public nuisance, after injunction to discontinue, is punishable with simple imprisonment for a term which may extend to six months, or with fine, or with both.[185]

An analysis of the above stated provisions makes it clear that the Executive Magistrate, after necessary enquiry, has the power to direct the person causing a public nuisance to remove the same and in the event of his failure to do so, the Magistrate has the power to have the same removed at the cost to be recovered from the defaulter and also to pass orders preventing repetition or continuance of the public nuisance. However, it should be borne in mind that Chapter X of the Code of Criminal Procedure deals with 'public nuisances' and not with private nuisances. The remedy for the latter is a civil suit, although what constitutes nuisance may be common to both classes. Paragraph 3 of Section 133, Cr. P.C. uses the word 'community' deliberately and that word has a definite meaning. It means the public at large or the residents of an entire locality. Section 133, Cr.P.C. provides a speedy and summary remedy in case of urgency where danger to public interest or public health is concerned. In all other cases, the party should be referred to the remedy under the ordinary law.[186]

The validity of the above stated provisions has been upheld by the apex Court in *Govind Singh* v. *Shanti Sarup*.[187] The Supreme Court, in this case,

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184. Section 141.
185. Section 291, I.P.C.
186. *Shaukat Hussain* v. *Sheodayal Saksaina*, AIR 1958 M.P. 350.
187. AIR 1979 SC 143.

recognised Section 133, Cr P C as an effective instrument in dealing with environmental pollution The Court upheld the view taken by Sub-Divisional Magistrate that smoke emitted by the chimney of an oven constructed by a baker, is injurious to the health and physical comfort of the people living or working in the proximity of the bakery The Court directed the baker to demolish the oven and chimney within a month and held that where health, safety and convenience of the public at large are involved, the safer course would be to accept the view of the Magistrate who himself had seen the hazard

A similar view was taken by the apex court in *Municipal Council, Ratlam* v *Vardhichand*[188] In this case, the Court compelled Ratlam Municipality to provide proper sanitation and drainage so that poor may live with dignity

The facts of the case were that the residents of New Road locality in Ratlam town alleged that since long they were suffering due to the mismanagement caused by Ratlam Municipality which resulted in the existence of open drains, pits and public excretion by humans for want of lavatories In this locality, many prosperous and educated persons were living on the roadside A large area of this locality had slums with no toilet facility and consequently people living in these slums defecated on the bank of drains or on the adjacent land This created heavy pollution which intern became breeding ground for mosquitoes Due to bad drainage system, water accumulated on the main road and during rainy season, this dirty water passed through living houses Moreover, a dirty nallah was flowing in the locality There was an alcohol plant in that locality and from this plant, waste effluents were discharged in the nallah

188 AIR 1980 SC 1622 (1980) 4 SCC 162

having chemicals with foul smell. Due to these unhygienic conditions, public health and safety was endangered.

The residents of the locality moved the Magistrate under Section 133 Cr.P.C. The Magistrate gave directions to the Municipality to draft a plan within six months for removing the nuisance. In appeal, the Sessions Court reversed the order of Magistrate but on an appeal to the High Court, the order of Magistrate was approved. On a further appeal to the Supreme Court, Krishna Iyer, J. delivered the judgment and affirmed the order of the Magistrate.

The basic question before the Supreme Court was whether by affirmative action, a court can compel a statutory body to carry out its duty to community by constructing sanitation facilities at great cost and on a time bound basis? The Court held that it was the duty of the Municipality to clean public streets, places and sewers and in this case it was established beyond doubt that Municipality had acted in gross negligent manner and committed breach of its duties. The Court reminded the Municipality of its duties towards people in the following words :

> A responsible municipality constituted for the precise purpose of preserving public health and providing better conveniences can not run away from its principal duty by pleading financial inability. Decency and dignity are non-negotiable facets of human rights and are the first charge on local self government bodies.

The Supreme Court issued following directions for execution by Ratlam Municipality :

1. The Municipal Council must provide proper drainage system within one year, for which the work must start within two months. The Magistrate should inspect its progress every three months.
2. The Municipal Council must take action to stop effluents from the Alcohol Plant flowing into the street. The State Government should also take steps to stop pollution.
3. The Municipal Council must construct, within six months, sufficient number of public latrines for use by men and women separately, provide for water supply and scavenging service morning to evening to ensure sanitation. The health officer of the Municipality would furnish a report, at the end of six months that the work has been completed.
4. State Government should give special instruction to Maleria Eradication Wing to stop mosquito breeding in Ward No. 12.
5. Municipal Council must fill up cesspools and other pits of filth.
6. If these directions are not complied with, the Sub-Divisional Magistrate would prosecute officers responsible and the Supreme Court would also consider action to punish for contempt.

Therefore, the object of Chapter X is to enable the Magistrate to make speedy orders and deal speedily with cases where a public nuisance has been committed. The provisions are intended to create facilities for conditional orders to become final without needless delay and thereby to promptly ensure public safety and convenience. However, these provisions should not be used to settle disputes between private individuals and the health, safety or physical comfort of the community as a whole should be taken into account.

6.18 The Motor Vehicles Act, 1988

The Motor Vehicles Act, 1988[189] (hereinafter 'the M V Act' or 'the Act') which replaces the earlier Act of 1939, was passed with the object of consolidating and amending the law relating to motor vehicles Vehicular emissions are responsible for about 65-70 percent of total air pollution in India, which in turn results in the premature death of about 7,50,000 people annually [190] The Act controls air pollution by providing standards for vehicular emissions Both Central and State Governments have power to make rules as to the specified matters The Central Government may make rules to regulate the construction, equipment and maintenance of motor vehicles including the rules relating to the emission of smoke, visible vapour, sparks, ashes, grit or oil, the reduction of noise emitted by or caused by vehicles, transportation of goods of dangerous or hazardous nature to human life, and standards for emission of air pollutants [191] Significant provisions have been made with respect to licensing and registration procedures, control of transport vehicles, control of traffic, requirement of insurance policies, limits of liability and Claims Tribunal

In 1989, the Central Motor Vehicles Rules were notified which incorporated nation-wide emission standards for both petrol and diesel engine vehicles Rule 115 lays down emission standards of smoke, vapour etc from motor vehicles and Rule 116, which was introduced in the year 1993, provides for the test for smoke emission level and Carbon Monoxide level for vehicles These rules authorise the regional or state transport authorities to allow private agencies such as petrol stations to test the emission levels of vehicles and issue

189 Act 59 of 1988. As amended by Acts of 1994, No 27 of 2000, and No 39 of 2001

190. *Air Pollution Kills 7 5 Lakh Indians Annually*, Press Trust of India, Washington, Oct 27, Business Line (New Delhi) dated 28 10 2002

191 Section 110

'pollution under control' certificates. Violation of emission standards results in the suspension of vehicle's registration until a fresh certificate is obtained.

The Act also imposes penal liability for violation of prescribed standards in relation to road safety and control of noise and air pollution. Any person violating the prescribed standards shall be punishable for the first offence with a fine of one thousand rupees and for any second or subsequent offence with a fine of two thousand rupees. Violation of the provisions or rules relating to the carriage of goods which are of dangerous or hazardous nature to human life, has been made punishable with imprisonment for a term which may extend to one year or with fine which may extend to three thousand rupees or with both. Penalty for second or subsequent offence is imprisonment for a term which may extend to three years or fine which may extend to five thousand rupees or both.[192]

In *State* v. *R.P. Sharma*,[193] the vehicle (Maruti Van) driven by the respondent was found emitting excessive smoke density in violation of Rule 115 of the Central Motor Vehicles Rules, 1989 (hereinafter the 'CMV Rules'). On being summoned, the respondent pleaded not guilty and claimed trial. On checking for pollution, the vehicle driven by the accused was found to be emitting smoke density of Carbon Monoxide 5.7% which was far in excess to the standard prescribed in sub-rule (2) of Rule 115 according to which it should not exceed 3% by volume.

The learned Metropolitan Magistrate, however, acquitted the accused purely on the basis of a construction of Rules 115 and 116 of CMV Rules. He

192. Section 190(2) & (3).
193. (1997) Cri.L.J. 1256 (Delhi).

observed that the inspectors of the State Transport Authority can not challan the motorists for violation of the provisions of sub-rule (7) of Rule 115 without following the procedure laid down under Rule 116. It was held that Rule 116 has an overriding effect and in every case where Rule 115 is to be invoked the inspectors must first follow the procedure prescribed under Rule 116. They can not challan anybody directly under Rule 115 read with Section 190 of the MV Act without following the procedure laid down in Rule 116.

On an appeal to the High Court, the judgment passed by the Magistrate was set aside. The Court held:

> We are unable to subscribe to the view taken by the learned Metropolitan Magistrate regarding the said Rules. In our opinion Rules 115 and 116 are independent of each other and for booking somebody under Rule 115 it is not mandatory to follow the procedure prescribed under Rule 116. Sub-rule (2) of Rule 115 prescribes the smoke emission standards for the various types of vehicles which use the roads while sub-rule (7) makes it compulsory for every vehicle to carry a valid 'pollution under control' certificate issued by an agency authorised for this purpose by the State Government. Thus any vehicle which violates the smoke emission standards prescribed under sub-rule (2) commits an offence and attracts the provisions of Section 190(2) of the Motor Vehicles Act. Similarly a vehicle which is required to carry a 'pollution under control' certificate as per sub-rule (7), must carry such a certificate at all times and such certificate should be produced on demand by the concerned officer. Not carrying a certificate by itself is an offence for which one can be booked and punished under Section 190(2) of the MV Act. Nothing else is relevant or required.[194]

The Court, therefore, observed that sub-rule (2) and sub-rule (7) of Rule 115 lay down statutory requirements which are independently punishable in the event of violation. They hold the field on their own force. They are not dependent on Rule 116. Rule 116 which was introduced in March, 1993 seeks

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194. *Id.* at 1259.

to create additional safeguards in the area of air pollution by vehicular traffic. The framers of Rule 116 must be taken to be fully conscious of the ever-increasing menace of smoke pollution on roads and in order to check the same and in order to provide further safeguards in this behalf they introduced Rule 116 on the Statute Book. The intention could in no way be said to waters down Rule 115. Moreover, prosecutions for violation of Rule 115 must have been going on much prior to Rule 116 since it was brought on the Statute Book in 1993. Thus, it can not be said that by bringing into force Rule 116, the Legislature has watered down what was already in existence in the shape of Rule 115. The object of bringing Rule 116 into force was to tackle the problem of air pollution through motor vehicles more vigorously.

In *State* v. *Urmi Ghoshal*,[195] the Court held that Section 110 of the MV Act empowers only the Central Government to frame rules with regard to air and sound pollution under Section 110(g) and (h) of the Act. Therefore, Rule 258 of the West Bengal Motor Vehicle Rules, 1989, laying down emission standards for motor vehicles, appears to be beyond the power and competence of the State of West Bengal. In this case, the Calcutta High Court referred to the decision of Delhi High Court in *State* v. *R.P. Sharma*[196] and held:

> With great respect, it seems that the attention of the Division Bench perhaps has not been invited to the provisions of Rule 116(6) which clearly lays down that before proceeding to levy a penalty under Section 190(2) by the authorities, the incumbent should be given some days' notice to get the vehicle rectified and if he fails to comply then alone a penalty under Section 190(2) can be levied.

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195. AIR 2002 Calcutta 192.
196. *supra* note 193.

The law laid down by the Calcutta High Court appears to be sound. As per Rule 116(6) of the MV Rules, an opportunity has been given to the driver or the person incharge of the vehicle to comply with the provisions of sub-rule (2) of Rule 115 within a period of seven days and produce 'pollution under control' certificate. If he fails to do so only then he should be liable for the penalty prescribed under Section 190(2). In case of failure, other rigorous steps have been laid down under sub-rules (7), (8) and (9) of Rule 116 itself according to which the certificate of registration of the vehicle may be suspended and in consequence any permit granted in respect of the vehicle under Chapter V or Chapter VI of the MV Act should also be deemed to have been suspended until a fresh 'pollution under control' certificate is obtained.

Therefore, if a vehicle is found emitting pollution, suddenly to serve the owners or person incharge of the vehicle with compounding slip and recover money and impose penalty in terms of Section 190(2) of the Act, does not seem to be a step warranted by law. According to the prescribed procedure, the authorities are under an obligation to give one week's time to the owner or the person incharge of the vehicle to get the same repaired and bring the emission within the permissible limit. However, a decision of the apex Court is needed on the issue to clarify the position.

In *M.C. Mehta* v. *Union of India*,[197] the Court observed that the norms fixed under the MV Act are in addition to and not in derogation of the requirements of the Environment (Protection) Act, 1986.

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197. (2001) 3 SCC 756.

There are around 30 million vehicles in India and the vehicular pollution is growing 15-17 percent annually. Average number of road accidents per thousand of vehicles is around 23, which is one of the highest in the world.[198] Proper implementation of the provisions of the Act and the rules made thereunder is necessary in order to overcome this worsening situation. To control vehicular pollution and protect environment is primarily the function of the Executive. It is their obligation to devise suitable measures and provide machinery for rigid enforcement of such measures as are necessary to curb the menace of chaotic traffic conditions and vehicular pollution with a view to ensure the welfare of general public. The inaction on the part of the executive, however, compels the Court to issue certain directions from time to time in general public interest. It is the obligation of the State to ensure that those directions are complied with.[199] The orders of the Court can not be treated lightly. They are meant to be complied with in letter and in spirit.[200]

6.19 Conclusion

This chapter has examined the existing legal regime in India with reference to general laws and judicial attitude concerning substances and processes which are hazardous in nature. These legislations share certain common characteristics. The foremost is that they institute a regime of criminalisation seeking to penalise non-conforming behaviour with criminal sanctions of imprisonment, of fine or both. In addition to the criminal sanctions, most of the laws provide for a regime of licensing and through this regime seek to regulate the handling of hazardous substances. Thirdly, in order to enforce the licensing

198. Kavita Bajeli Datt, *Study says Delhi traffic getting worse, mishaps rising*, Asian Age (New Delhi) dated 14.05.2001: CSE-India Green File, No. 161 at 64.
199. *See M.C. Mehta* v. *Union of India*, AIR 1999 SC 301.
200. *supra* note 195.

provisions, they create a regiment of inspectors who operate as front line officers. The efficacy of the system comes to depend upon the efficacy of the inspectors. The inspectorate is also the weakest link as the inspector is a low paid officer directly exposed to the influence of such parties having pecuniary interest in their ways of handling such substances. The usual provision is to provide for cancellation or suspension of licences in case of infraction of the law. Justice is sought to be ensured to the affected interest by the provision of an appeal to an officer or authority higher than the licensing authority but nevertheless, the part of the executive. Some legislations provide for consultation with affected interest before enforcing the rules. But in practice the consultation is neither adequate nor public. One apparent lacuna in all these legislations is that no room is provided at all for participation of either the public or non-governmental organisations (NGOs). Because of this, the laws appear to be a sheer executive discretion and the kind of public support which is needed to make such laws affective is just missing.

The unmindful technological development, rapid growth of industrialisation and urbanisation are now assuming dangerous proportions throughout the world These activities result in the production of tons of hazardous wastes and release of toxic chemicals which in turn have become a serious threat to human health and the environment. The improper disposal of hazardous waste, over exhaustion of irreplaceable natural resources and irrational use of pesticides and other hazardous chemicals have virtually destroyed the assimilative capacity of the environment. The results are disastrous. Overuse of science and technology and throw away culture of the present day society have already brought untold miseries to mankind. It has now become a fundamental duty,

more than ever, of every State and each individual to protect the environment from activities and processes that are hazardous in nature.

At international level, efforts have been made to protect and preserve the environment and ecological balance against hazardous substances. However, these efforts are largely formal. They lack missionary zeal. The basic principle of state responsibility in this regard is contained in the maxim '*Sic Utero tuo at alienum non leadas*', which means do not use your property in a manner so as to cause injury to that of others. This principle of state responsibility which was codified in Principle 21 of the Stockholm Conference, 1972[201] had its origin in the famous case of *United States* v. *Canada* (known as Trail Smelter case).[202] In this case, the emission of noxious gases from a Canadian (Trail Smelter) company smelting lead and zinc in Canada caused harm to land and other interests of the State of Washington in the USA. Canada was held liable on the ground that no State has a right to use or permit the use of its territory in a manner so as to cause injury to the territory or property of other State. The same principle was affirmed by the International Court of Justice in *United Kingdom* v. *Albania* (known as Corfu Channel Case)[203] where the Court held that every State is obliged 'not to knowingly allow its territory to be used for acts contrary to the rights of other States'.

Besides the above stated principle, the legal international regime relating to prior informed consent procedure, collection and dissemination of information,

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201. For further ratification of the Principle, *see e.g.* Article 30 of the Charter of Economic Rights and Duties of States; Article 194(2) of the 1982 UNCLOS; Principle 21(d) of the U.N. World Charter for Nature, 1982; and Principle 2 of the Rio Declaration, 1992.
202. 39 Am. J. Int'l L. 684 (1941).
203. ICJ Reports 8 (1947).

mandatory environmental impact assessment, incorporation of 'precautionary' and 'polluter-pays' principles, strengthening the role of NGOs and the use of best available techniques etc. further highlight the components of international policy for the proper control and management of hazardous substances. Besides international efforts, the legal and regulatory measures adopted in developed countries like USA and UK, may also serve as important guidelines for a developing country like India in evolving an effective and comprehensive system for the control and management of these substances.

In India, general legislative measures have been taken to protect human health and the environment against hazardous substances which exhibit a variety of behavioural patterns and modes of action. Besides general laws, special legislative and administrative measures have also been taken in the shape of different environmental Acts and the rules made and notifications issued thereunder. These efforts indicate that India is consistently trying to match global developments in this regard. Although the legislative schemes in India do overlap to a certain extent so far as problems of scale and definition of hazardous substances and the role of administration are concerned, rigid implementation and enforcement of these schemes is the need of the hour. This shall ensure that the manufacture, use and transport of hazardous products and substances are properly regulated. Paying attention to this vital aspect is needed because these substances endanger the very existence of human race.

Indian environmental law as such has developed considerably during the last two decades. Careful judicial thinking has contributed significantly to this evolution. As regards the specific issue of proper control and management of

hazardous substances, the Indian judiciary has played a key role in this respect also. Where there are loopholes in the existing legal system and administration is not well equipped to meet the challenge, the judiciary has adopted an activist role. Various decisions of the High Courts as well as the Supreme Court of India forbidding hazardous activities in residential areas, compelling the municipal authorities to perform their statutory obligations, compelling the industrial units to set up effluent treatment plants and to install air-pollution control devices, appointing committees to monitor the ground situation and directing the closure / relocation of hazardous industries and rehabilitation measures etc. are some of the significant cases highlighting judicial activism This reflects that India is continuously making efforts to overcome the problems associated with the use and handling of hazardous substances. What is really needed is a genuine will on the part of enforcement agencies

Despite the existence of environmental policy, the Constitutional mandate, flurry of legislations and administrative infrastructures, the problems associated with hazardous substances still remain a grave cause of concern in our country Legislation and policy pronouncements appear to be ineffective due to a weak enforcement machinery. The enforcement agencies must ensure that laws are enforced in spirit and these substances are not permitted to be mixed with the natural resources, such as, water and air. Strengthening of enforcement agencies and fixing definite responsibilities, introduction of clean technologies, creating awareness among the masses, peoples participation in decision making, involvement of NGOs, and imparting necessary education are some of the aspects which require immediate attention. In fact, a multi-disciplinary

approach is needed to tackle the problem. Moreover, since the laws relating to hazardous substances are found scattered in varying laws in India, the enactment of a comprehensive law on the subject has also become imperative.

The next chapter discusses the issues relating to liability and compensation in respect of hazardous substances.

Chapter – 7

The Liability and Compensation Regime

In the earlier chapters we have analysed the national as well international legal regimes pertaining to hazardous substances. We now propose to discuss issues of liability and compensation in the light of principles and rules particularly created and fostered to handle the problems of environmental pollution Our aim is to understand the efficacy of regulatory controls in terms of its outcomes As noted earlier, these issues have emerged as a major concern for the survival and welfare of mankind throughout the world Modern civilisation, armed with rapidly advancing technology and fast growing economic system, is under a constant threat from its own activities. The system is generating large volumes of hazardous wastes. It is prone to accidental releases of hazardous chemicals These substances pose a grave danger to present as well as future generations Different nations of the world are endowed with varying environmental resources, but degradation of environment affects all the nations The issue of hazardous substances has become a common concern of all the nations The construction of appropriate liability models fixing definite responsibilities on the individual, industries, society and the state, within the limits of law, has assumed importance. This is necessary to deter persons, associations and governments from causing pollution through hazardous substances. The liability models generated particularly to deal with such substances are the focus of this chapter.

7.1 Absolute Liability: Generation of New Law

With the expansion of chemical based industries in India, the use and storage of hazardous substances have increased. These activities are permissible under law

because of their economic potential. The greatest break through occurred in *Oleum Gas Leak case.*[1] In this scenario, the rule of strict liability as laid down in *Rylands* v. *Fletcher*,[2] which is subject to many qualifications and exceptions, has been rendered inappropriate and unacceptable in India. In *Oleum Gas Leak case*[3] the Supreme Court refused to apply the rule saying that it is not suited to the conditions in India and propounded a new principle of liability, known as absolute liability, for industries engaged in hazardous activities. Bhagwati, C.J. laid down a set of four interrelated principles:

(i) a hazardous or inherently dangerous industry owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous nature of the activity which it has undertaken;

(ii) the hazardous or inherently dangerous activity ... must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm;

(iii) if the enterprise is permitted to carry on an hazardous or inherently dangerous activity for its profit, the law must presume that such permission is conditional on the enterprise absorbing the cost of any accident arising on account of such hazardous or inherently dangerous activity as an appropriate item of its overheads. Such hazardous or inherently dangerous activity for private profit can be tolerated only on

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1. *M.C. Mehta* v. *Union of India*, (1987) 1 SCC 395.
2. (1868) LR 3 HL 330. For recent approval of the rule by the House of Lords, see *Cambridge Water Co. Ltd.* v. *Eastern Counties Leather, Plc.* (1994) 2 WLR 53: (1994) 1 All ER 53.
3. *supra* note 1.

condition that the enterprise engaged in such hazardous or inherently dangerous activity indemnifies all those who suffer on account of the carrying on of such hazardous or inherently dangerous activity regardless of whether it is carried on carefully or not...; and

(iv) the measure of compensation ... must be correlated to the magnitude and capacity of the enterprise because such compensation must have a deterrent effect.

The Court concluded:

> We would therefore hold that where an enterprise is engaged in a hazardous or inherently dangerous activity and harm results to any one on account of an accident in the operation of such hazardous or inherently dangerous activity resulting, for example, in escape of the toxic gas, enterprise is strictly and absolutely liable to compensate all those who are affected by the accident and such liability is not subject to any of the exceptions.[4]

However, in *Union Carbide Corporation* v. *Union of India*,[5] Ranganath Misra, C.J. observed that what was said in *M.C. Mehta case*[6] was essentially obiter and held:

> The extracted part of the observations from *M.C. Mehta case* perhaps is a good guideline for working out compensation in the cases to which the ratio is intended to apply. The statement of the law *ex facie* makes a departure from the accepted legal position in *Rylands v Fletcher*. We have not been shown any binding precedent from the American Supreme Court where the ratio of *M.C. Mehta* decision has in terms been applied. In fact, Bhagwati, C.J. clearly indicates in the judgment that his view is a departure from the law applicable to western countries.[7]

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4. *Id.* at 420-21.
5. (1991) 4 SCC 584.
6. *supra* note 1.
7. *supra* note 5, at 608.

However, it is important to note that the above observation was an expression of a minority view only and the majority judgment in *Union Carbide Corporation case*[8] delivered by M.N. Venkatachaliah, J. did not express any opinion on the issue. Still the controversy raised by the opinion of Ranganath Misra, C.J. in *Union Carbide Corporation case* was settled by the Supreme Court in *Indian Council for Enviro-Legal Action* v. *Union of India*.[9] The Court held :

> ...We on our part find it difficult to say, with great respect to the learned Chief Justice, that the law declared in *Oleum Gas Leak case* is obiter. It does not appear to be unnecessary for the purposes of that case...We are convinced that the law stated by this Court in *Oleum Gas Leak case* is by far the more appropriate one -- apart from the fact that it is binding upon us. (We have disagreed with the view that the law stated in the said decision is obiter.) According to this rule, once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person by his activity irrespective of the fact whether he took reasonable care while carrying on his activity. The rule is premised upon the very nature of the activity carried on.

Therefore, the activities of an enterprise engaged in hazardous or inherently dangerous industry can be tolerated provided it indemnifies all those who suffer on account of the carrying on of such industry regardless of whether it is carried on carefully or not. Whether an activity is inherently or abnormally dangerous is to be determined on a case to case basis, taking all relevant circumstances into consideration. The Supreme Court has thus propounded a social insurance concept in respect of hazardous substances and processes admitting of no exceptions. A far reaching simple proposition seeks to translate

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8. *Ibid.*
9. (1996) 3 SCC 212, 242-43, 246.

the commitment to 'fraternity' made in the Preamble to the Constitution of India. Those who deal in hazardous substances and processes must provide succour to all those who incur any injury attributable to the hazardous nature of the enterprise.

Apart from overarching principle of absolute liability the courts in India have also adopted the two basic principles of environmental law evolved by the courts in other developed countries.

7.2 'Precautionary' and 'Polluter-Pays' Principles

Before we come to the statutory schemes of liability and compensation relating to hazardous substances as contained in international, regional and national instruments, it is necessary to discuss the two basic principles of environmental law, namely the 'precautionary' principle and 'polluter-pays' principle. Most of the international, regional and state instruments specifically refer to these principles while addressing the issue of liability and compensation in relation to environmental damage. The two principles are relevant to India also being recognised as part of the law of the land.

The traditional tort system permits the injured party to claim compensation, usually in the form of damages, by way of a civil or private action against the person who caused the injury. In this sense, civil liability differs from State liability. Civil liability creates a relationship between the person liable and the person injured, whereas State liability creates a relationship between the State involved in a wrongful act and the citizens of the injured State. In other words, in case of State liability, it is the State rather than the private individual who is

liable due to some violation of an international legal obligation established by treaty or by rule of customary international law.[10] These concepts of civil liability and State liability are not to be confused with environmental liability which is the generic term that refers to the way and the means of forcing major polluters to repair the damage that they have caused, or to pay for those repairs.[11] It is usually based on a general obligation to prevent environmental damage, to restore the environment when and where damage occurs, and to compensate if the damage is irreversible. To this extent, environmental liability seems to be the fundamental expression of 'precautionary' and 'polluter-pays' principles. Although environmental damage does not include damage to persons or property, but such damage could be consequential to the damage caused to the environment.

7.2.1 *Meaning and Application of 'Precautionary' Principle*

Precautionary principle is one of the pillars of prevention.[12] It applies to environmental decision-making where there is scientific uncertainty. It requires that where there are threats of damage to the environment, lack of full scientific certainty should not be used as a reason for postponing cost effective measures to prevent environmental degradation. The principle establishes a duty to take such measures that anticipate, prevent and attack the causes of environmental degradation even where there is not yet scientific proof that the environment is

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10. LEFEBER, R., TRANSBOUNDARY ENVIRONMENTAL INTERFERENCE AND THE ORIGIN OF STATE LIABILITY 15 (Kluwer Law International, 1996).
11. European Environmental Bureau, *Environmental Liability in Europe: Concerning the Need for a European Directive on Environmental Liability*, Chapter 1 (1997).
12. For a detailed study *see* L. Soljan, *The General Obligation to Prevent Transboundary Harm and Its Relation to Four Key Environmental Principles*, 3 Austrian Review of International and European Law, 209-232 (1998).

being harmed. In fact, the concept rejects the assimilative capacity approach towards environment. The assimilative capacity approach is based on the belief that scientific theories are certain and adequate to provide the remedies for ecological restoration whenever environmental pollution occurs. However, assimilative capacity principle suffered a set back when the inadequacies and uncertainties of science became visible in environmental context.[13] The precautionary principle assumes that science does not always provide the insights needed to protect the environment effectively, and that undesirable effects may result if measures are taken only when science does provide such insights.[14] The essence of the precautionary principle is that once a risk has been identified, the lack of scientific proof of cause and effect should not be used as reason for not taking action to protect the environment.[15] Precaution comes into play when the risk is too high -- so high in fact that full scientific certainty should not be required prior to the taking of remedial action.[16] For the application of the principle, the following three essential features must be satisfied:

i. regulatory inaction threatens non-negligible harm;

ii. there exists a lack of scientific certainty on the cause and effect relationship; and

iii. under these circumstances, regulatory inaction is unjustified.[17]

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13. Gurdip Singh, *Legal Status of Precautionary Principle in Environmental Jurisprudence*, 5 National Capital Law Journal, 34-36 (2000).
14. David Freestone & Ellen Hey, *Origin and Development of the Precautionary Principle*, in D. FREESTONE & E. HEY (eds.), THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW (The Hague, Kluwer Law International, 1996).
15. *Id.* at 13.
16. Alexander Kiss, *The Rights and Interests of Future Generations and the Precautionary Principle*, in FREESTONE & HEY, *supra* note 14, at 27.
17. James Cameron & Juli Abouchar, *The Status of Precautionary Principle in International Law*, in FREESTONE & HEY (eds.), *supra* note 14, at 45.

7.2.2 *Legality of the Principle*

The precautionary principle has entered the numerous municipal and international documents. It is said to have been derived from the concept of *Vorsorgeprinzip* under German Law. The concept encompasses both prevention and precaution. However, in German Law the *Vorsorgeprinzip* has a broader meaning than the precautionary principle.[18] In U.K., the 1990 Government White Paper (Department of the Environment, 'This Common Inheritance', White Paper on Environmental Policy, H.M. Stationery Office, London, 1990, at 7) incorporates:

> Where there are significant risks of damage to the environment, the Government will be prepared to take precautionary action to limit the use of potentially dangerous materials or the spread of potentially dangerous pollutants, even when the scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it. The precautionary principle applies particularly where there are good grounds for judging either that action taken promptly at comparatively low cost may avoid more costly damage later, or that irreversible effects may follow if action is delayed.[19] (para 1.18).

Similarly under the U.S. Law, the principle is widely applied and a number of statutes exist that do not allow use of chemicals which have been shown to cause cancer, unless it can be proved that 'the amount of chemical in question poses no significant risk'.[20]

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18. *See* M. KLOEPFER, UMWELTRECHT 166-177 (2d ed., Munich, Beck, 1998); S. Boechmer & Christiansen, *The Precautionary Principle in Germany-Enabling Government*, in T. O' RIORDAN AND J. CAMERON, INTERPRETING THE PRECAUTIONARY PRINCIPLE, 31-60 (London, Earthscan Publications, 1994).
19. *supra* note 17, at 38-39.
20. *See* F.B. Cross, *Paradoxical Perils of the Precautionary Principle*, 53 Wash. & Lee L. Rev., 851, 853 (1996).

Of the international documents incorporating precautionary principle,[21] the most authoritative is Principle 15 of the Rio Declaration which states

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation

Principle 11 of the U N World Charter for Nature, 1982[22] provides

> Activities which might have an impact on nature shall be controlled, and the best available technologies that minimize significant risks to nature or other adverse effects shall be used, in particular
>
> a) Activities which are likely to cause irreversible damage to nature shall be avoided,
>
> b) Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination, their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not full understood, the activities should not proceed,
>
> c) Activities which may disturb nature shall be preceded by assessment of their consequences, and environmental impact studies of development projects shall be conducted sufficiently in advance, and if they are to be undertaken, such activities shall be planned and carried out so as to minimize potential adverse effects,
>
> d) Agriculture, grazing, forestry and fisheries practices shall be adopted to the natural characteristics and constraints of given areas,
>
> e) Areas degraded by human activities shall be rehabilitated for purposes in accord with their natural potential and compatible with the well being of affected populations

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21 *See, e g*, Article 3(3) of the 1992 UN Framework Convention on Climate Change, The Preamble of the 1992 Convention on Biological Diversity, Article 2(2)(a) of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Convention, Article 1(3) of the 1996 London Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, and Article 1 of the 2001 Stockholm Convention on Persistent Organic Pollutants

22 U N General Assembly Resolution 37/7

Agenda 21 in its Chapter 17 dealing with the 'Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of Their Living Resources' states:[23]

> A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, *inter alia*, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for handling of hazardous substances, and a comprehensive approach to damage impact from air, land and water.

Chapter 17 further obliges States to 'apply preventive, precautionary and anticipatory approaches so as to avoid degradation of the marine environment, as well as to reduce the risk of long-term or irreversible adverse effects upon it.[24] Similarly, Chapter 19 of Agenda 21 for its programme area 'A' dealing with 'Expanding and Accelerating International Assessment of Chemical Risks' obliges the governments to 'strengthen and expand programmes on chemical risk assessment within the United Nations system. IPCS (UNEP, ILO, WHO) and the FAO, together with other organizations, including the OECD, based on an agreed approach to data-quality assurance, application of assessment criteria, peer review and linkages to risk management activities, taking into account the precautionary approach'.[25] The basic object of its programme area 'D' dealing with the 'Establishment of Risk Reduction Programmes' was emphasised in the following words:

> The objective of the programme area is to eliminate unacceptable or unreasonable risks and, to the extent economically feasible, to reduce risks posed by toxic chemicals,

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23. Para 17.21.
24. Para 17.22(a).
25. Para 19.14(a).

> by employing a broad-based approach involving a wide range of risk reduction options and by taking precautionary measures derived from a broad-based life-cycle analysis.[26]

The incorporation of the principle in various international agreements with sufficient State practice strongly supports the speculation that it has already entered the body of international customary law. Strict implementation of the principle involves reversal of the burden of proof as well where it is placed on those who want to change the status quo. The implementation of the principle also presupposes application of best environmental practices and best available technologies. It has, in fact, become an important component of sustainable development. Evidence of its importance can also be found in judicial decisions.[27]

7.2.3 *Application of the Principle in India*

In India, the 'precautionary principle' has been accepted as a part of the law of the land. It makes it mandatory for the State Government to anticipate, prevent and attack the causes of environmental degradation.[28] The uncertainty of scientific proof and its changing frontiers from time to time had led to great changes in environmental concepts during the period between the Stockholm Conference of 1972 and the Rio Conference of 1992. A basic shift in the approach to environmental protection occurred initially between 1972 and 1982. Earlier, the concept was based on the 'assimilative capacity' rule as revealed from Principle 6 of the Stockholm Conference. The said principle assumed that science could provide policy makers with the information and

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26. Para 19.48.
27. *See,e.g., Nuclear Tests II Case (New Zealand* v. *France)*, ICJ Reports 1995, at 288; *Southern Bluefin Tuna Cases (New Zealand* v. *Japan; Australia* v. *Japan)*, http://www.un.org/Depts/ITLOS/Order-tuna34.htm.
28. *M.C. Mehta (Badkhal and Surajkund Matter)* v. *Union of India*, (1997) 3 SCC 715.

means necessary to avoid encroaching upon the capacity of the environment to assimilate impact. It presumed that relevant technical expertise would be available when environmental harm was predicted and there would be sufficient time to act in order to avoid such harm. But in the 11th Principle of the U.N. General Assembly Resolution on World Charter for Nature, 1982, the emphasis shifted to the "precautionary principle", and this was reiterated in the Rio Conference of 1992 in its Principle 15.[29]

Realisation of inadequacies of science has led to the wide acceptance of precautionary principle of 1982. It is based on the theory that it is better to err on the side of caution and prevent environmental harm which may indeed become irreversible. It involves the anticipation of environmental harm and taking measures to avoid it or to choose the least environmentally harmful activity. It is based on scientific uncertainty... The precautionary principle was recommended by the UNEP Governing Council (1989). The Bamako Convention also lowered the threshold at which scientific evidence might require action by not referring to 'serious' or 'irreversible' as adjectives qualifying harm.[30]

However, summing up the legal status of the precautionary principle, one commentator characterised the principle as still "evolving" for though it is

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29. *A.P. Pollution Control Board* v. *Prof. M.V. Nayudu (Retd.)*, (1999) 2 SCC 718, 732-33.
30. *Id.* at 734. Article 4(3)(f) of the Bamako Convention provides that 'each party shall strive to adopt and implement the prevention, precautionary approach to pollution problems which entails, *inter alia*, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. The parties shall cooperate with each other in taking the appropriate measures to implement the precautionary principle to pollution prevention through the application of clean production methods rather than the pursuit of a permissible emissions approach based on assimilative capacity assumptions'.

accepted as part of the international customary law, 'the consequences of its application in any potential situation will be influenced by the circumstances of each case'. (*See* First Report of Dr. Sreenivasa Rao Pemmaraju -- Special Rapporteur, International Law Commission dated 3.4.1998, paras 61 to 72).[31]

But as regards precautionary principle it must be remembered that an apathetic attitude may lead to a situation -- 'only when the last tree has died, and the last river has been poisoned, and the last fish has been caught, will we realise that we cannot eat money'[32] - from where it will not be possible to come back. The application of the principle can certainly reduce, if not entirely eliminate, the detrimental effects of certain activities associated with hazardous substances.

7.2.4 *Meaning and Application of Polluter-Pays Principle*

Although the precautionary approach is important but it cannot be over emphasised. Remedial mechanisms are equally important. They, too, cannot be neglected. They act as deterrents. In case precautionary mechanisms fail and environmental harm is caused, there must be mechanisms to ensure restoration of the damaged environment and compensation to the victims. Polluter - pays principle comes into play then. It means that the polluter should bear the cost of environmental damage. It has an indirect bearing on prevention also and the object of the principle is to channel the costs of prevention and reparation of environmental damage to the person who is in the best position to prevent such damage and internalise the costs of pollution damage.[33] The principle requires that the person responsible for causing pollution and its subsequent costs

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31. *Ibid.*
32. *19th Century Free Indian, supra* note 17, at 29.
33. *supra* note 11.

should pay these costs. It influences allocation of economic obligations in relation to environmentally damaging activities, in particular in relation to liability, the use of economic instruments and the application of the rules relating to competition and subsidy.[34]

7.2.5 *Legality of the Principle*

The hazardous substances, particularly when transported, are prone to accidents and can cause severe environmental damage. In this context, the polluter-pays principle assumes special significance. It makes the person, who has control over the polluting activity and who benefits from it economically, responsible for financial consequences of the harmful activity.

At the international level, the polluter pays principle was first developed by the OECD. In 1972, the Council Recommendation on Guiding Principles Concerning the International Economic Aspects of Environmental Policies,[35] stated as under:

> The Principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called 'Polluter-Pays Principle'.

The above stated Recommendation was confirmed by the OECD in 1974[36] and reaffirmed in 1989.[37] In 1991, the OECD urged the consistent application of the principle in different sectors including pollution control measures.[38]

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34. U. Kettlewell, *The Answer to Global Pollution? A Critical Examination of the Problems and Potential of the Polluter - Pays Principle*, 3 Colorado Journal of International Law and Policy, 429, 431 (1992).
35. For the text *see* 11 ILM 1172 (1972).
36. OECD Council Recommendation C(74) 223 (1974). For the text *see* 14 ILM, Annex, Title C, Para 4, (1975).
37. OECD Council Decision and Recommendation on the Application of the Polluter-Pays Principle to Accidental Pollution. For the text *see* International Environmental Reports (BNA), No. 8, & 2, at 23 (1989).
38. *See* OECD Council Regulation on the Use of Economic Instruments in Environmental Policy (1991). For the text *see* International Environmental Reports (BNA) 14(2), No. 5&2, at 23 (1991).

The polluter-pays principle has entered many international instruments.[39] The Stockholm Conference, 1972, though did not specifically mention the principle, yet in Principle 23 incorporated that 'it will be essential in all cases to consider the systems of values prevailing in each country, and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for developing countries'. Principle 16 of the Rio Declaration, 1992 explicitly introduced the principle in the following words:

> National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interest and without distorting international trade and investment.

Chapter 17 of Agenda 21 obliged States to 'develop economic incentives, where appropriate, to apply clean technologies and other means consistent with the internalisation of environmental costs, such as the polluter-pays principle, so as to avoid degradation of the marine environment'. Similarly Chapter 20 of Agenda 21 provided the following:

> Governments should include in national planning and legislation an integrated approach to environmental protection, driven by prevention and source reduction criteria, taking into account the 'polluter-pays' principle, and adopt programmes for hazardous waste reduction, including targets and adequate environmental control.[40]
>
> Further, Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry

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39. *See, e.g.*, the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki), 22 Law of the Sea bulletin, 54 (1993); and the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, (Helsinki), Cmnd. 2141.
40. Para 20.19(b).

> and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible and when appropriate with the application of the 'polluter-pays' principle.[41]

The above stated examples clearly indicate that the polluter-pays principle has got international recognition. It seems very relevant so far as economic instruments are concerned. However, lack of an agreed definition, disputes over its exact scope and identification of the real polluter are some of the problems associated with the principle. Still the incorporation of the principle in any liability and compensation regime will certainly make the regime more effective in order to induce compliance with relevant rules. This is specially significant in respect of hazardous substances.

7.2.6 *Application of the Principle in India*

Like the 'precautionary' principle, the 'polluter-pays' principle has also been recognised as part of the law of the land in India. The Indian courts, in various decisions, have enforced the principle while awarding damages against the polluter. In *M.C. Mehta* v. *Kamal Nath*,[42] the Supreme Court observed that the 'Polluter Pays Principle' is widely accepted as a means of paying for the cost of pollution and control. To put in other words, the wrongdoer, the polluter, is under an obligation to make good the damage caused to the environment. The Court held:

> In 1972, the Organisation for Economic Co-operation and Development adopted the "Polluter Pays Principle" as a recommendable method for pollution cost allocation. This principle was also discussed during the 1972 Paris Summit. In 1974, the European Community recommended the application

41. Para 20.22(g).
42. AIR 2000 SC 1997, 2000.

> of the principle by its member states so that the costs associated with environmental protection against pollution may be allocated according to uniform principles throughout the Community In 1989, the Organisation for Economic Co-operation and Development reaffirmed its use and extended its application to include costs of accidental pollution. In 1987, the principle was acknowledged as a binding principle of law as it was incorporated in European Community Law through the enactment of the Single European Act, 1987. Article 130r2 of the 1992 Maastricht Treaty provides that Community Environment Policy "shall be based on the principle that the polluter should pay".[43]

The Court further observed that the 'Polluter-Pays Principle' has also been applied by this Court in various decisions. In *Indian Council for Enviro-Legal Action* v. *Union of India*,[44] it was held that once the activity carried on was hazardous or inherently dangerous, the person carrying on that activity was liable to make good the loss caused to any other person by that activity This principle was also followed in *Vellore Citizens Welfare Forum* v. *Union of India*[45] and the Motel was directed to pay compensation by way of cost for the restitution of the environment ecology of the area

So, the 'polluter-pays' principle has now come to be accepted universally as a sound principle In *Indian Council for Enviro-Legal Action case*,[46] the Court held

> Thus, according to this principle, the responsibility for repairing the damage is that of the offending industry. Sections 3 and 5 (EPA) empower the Central Government to give directions and take measures for giving effect to this principle. In all the circumstances of the case, we think it appropriate that the task of determining the amount required for carrying out the remedial measures is placed upon the Central Government in the light of the provisions of the EPA, 1986. It is, of course, open

43. *Id.* at 2001
44. *supra* note 9
45. AIR 1996 SC 2715.
46 *supra* note 9, at 248.

> to the Central Government to take the help and assistance of State Government, RPCB or such other agency or authority, as they think fit.

7.2.7 *Application of Both the Principles in India*

As noted in the preceding paras, the precautionary principle and polluter pays principle have been accepted as part of the law of the land. In view of the Constitutional mandate [Articles 21, 47, 48A and 51A(g)] and statutory provisions as contained in the Water Act, 1974, Air Act, 1981 and EPA, 1986, there is no hesitation in holding that the precautionary principle and the polluter pays principle are part of the environmental law of the country. Even otherwise once these principles are accepted as part of the customary international law, there would be no difficulty in accepting them as part of the domestic law. It is almost accepted proposition of law that the rules of customary international law which are not contrary to the municipal law shall be deemed to have been incorporated in the domestic law and shall be followed by the courts of law.[47]

The traditional concept that development and ecology are incompatible is no longer acceptable. 'Sustainable Development' is the answer... The 'Precautionary Principle' and the 'Polluter Pays' principle are essential features of 'Sustainable Development'. The 'Precautionary Principle' in the context of the municipal law means:

i) Environmental measures - by the State Government and the statutory authorities -- must anticipate, prevent and attack the causes of environmental degradation.

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47. *supra* note 45, at 2721-22. *See also Bittu Sehgal* v. *Union of India*, (2001) 9 SCC 181.

ii) Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation

iii) The 'onus of proof' is on the actor or the developer / industrialist to show that his action is environmentally benign

The 'Polluter Pays' principle has been held to be a sound principle by this Court in *Indian Council for Enviro-Legal Action Case* [48] The 'Polluter Pays' principle as interpreted by this Court means that the absolute liability for harm to the environment extends not only to compensate the victims of pollution but also the cost of restoring the environmental degradation Remediation of the damaged environment is part of the process of 'Sustainable Development' and as such polluter is liable to pay the cost to the individual sufferers as well as the cost of reversing the damaged ecology [49]

In *M C Mehta (Calcutta Tanneries' Matter)* v *Union of India*,[50] the Court recognised 'precautionary principle' and the 'polluter pays principle' as part of the law of the land and held that 'it is thus settled by this Court that one who pollutes the environment must pay to reverse the damage caused by his acts' The Court directed the State Government to appoint an Authority to assess the loss to the ecology / environment in the affected areas and to further determine the compensation to be recovered from the polluter - tanneries as cost of reversing the damaged environment The Court imposed a pollution fine of Rs 10,000 each on all the tanneries to be paid in the office of the Collector /

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48 *supra* note 9
49 *supra* note 45, at 2720-21
50 (1997) 2 SCC 411

District Magistrate of the area concerned. The Court further directed that the amount of compensation and fine recovered from the polluting tanneries should be deposited under a separate head called "Environment Protection Fund" and should be utilised for restoring the damaged environment and ecology. The tanneries which fail to deposit the amount of Rs. 10,000 by a stipulated date i.e. by 15.3.1997 should be closed forthwith and are also liable under the Contempt of Courts Act. The State Government was directed to frame and execute scheme / schemes for reversing the damage caused to the ecology and environment by pollution.

In *M.C. Mehta* v. *Union of India*,[51] the Court observed that one of the principles underlying environmental law is that of sustainable development This principle requires such development to take place which is ecologically sustainable. The two essential features of sustainable development are :

(a) the precautionary principle, and

(b) the polluter pays principle.

In *M.P. Rambabu* v. *The District Forest Officer*,[52] the Andhra Pradesh High Court observed:

> It is now well settled that the Court with a view to stop or regulate pollution may take recourse to the precautionary principle or polluter pays principle. It is also now no longer *res integra* that the burden of proof is on the polluter to show that no pollution is being caused.

In *Nature Lovers Movement* v. *State of Kerala*[53] (Full Bench), the Court held that the 'sustainable development theory' no doubt recognises and avows

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51. AIR 2002 SC 1696.
52. AIR 2002 Andhra Pradesh 256, 274.
53. AIR 2000 Kerala 131.

'precautionary principle' and 'polluter pays principle' It referred to Principle 13 of the Rio Declaration which proclaims

> The States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction

In view of the above declaration, the Court observed that there must be laws to safeguard and compensate the victims of polluters as a measure of our acceptability to 'liability and compensation' for adverse effects of an environmental damage causing internally or internationally The law in India in this regard is advancing rapidly due to Court's interventions and effects made thereby on economic growth and environmental balance are remarkable and marvelous [54]

Therefore, the precautionary principle and polluter pays principle have already emerged as binding principles of law Strict compliance of the principles by individual states may certainly help in protecting the environment Although there are uncertainties regarding their legal content and practical workings, incorporation of these principles in any legal system, specially in the environmental decision making process, has the potential of properly controlling and regulating the harmful activities connected with hazardous substances The application of polluter-pays principle in any liability and compensation regime may surely make the regime more effective

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54 *Id* at 173

7.3 International Regime

Many states have devised their own national measures and restitutional framework to deal with the problems of exposure to hazardous substances, compensation to victims and rehabilitation process. Before coming to the statutory liability models available in India, a brief mention of international liability regime and the models prevailing in two developed countries (U.K. and U.S.A), is in order to provide a comparative picture.

7.3.1 *Hazardous Wastes*

The emerging global waste management regime as established by the Basel Convention[55] and other regional waste management systems concluded under its umbrella provides a standard of behaviour that must be adhered to in the context of the management and disposal of hazardous wastes. We have already discussed the development and content of such systems in chapter II.

In order to make the management regime effective, mechanism must be set up which induce compliance with the relevant rules and regulate the consequences of their breach. Such mechanisms should have three main objectives:

a) the prevention of environmental damage resulting from hazardous wastes;

b) reparation of damage once it has occurred; and

c) the equitable allocation of the costs of remedial measures.

However, the issue of 'liability and compensation' in the event of any damage resulting from the hazardous wastes could not be resolved during the Basel Convention negotiations to a great dissatisfaction of the developing countries

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55. 289 I.L.M. 657 (1989).

and was left to be settled through a Protocol. The first meeting of the Conference of the Parties (COP-1) decided to establish an Ad hoc Working Group of Legal and Technical Experts to consider and develop a draft Protocol on liability and compensation including the establishment of an international fund for compensation for damage resulting from the transboundary movement of hazardous wastes and their disposal.[56] The above stated objectives of the enforcement mechanism were recognised by the Working Group in the following words:

> The victim should be protected; the person who created a risk should, in all fairness, be held liable for the consequences of that risk; a good liability regime should in general provide an incentive to prevent waste generation; [and] last but not least, such a regime would enable industry to know where it stood.[57]

The work which began in 1990 with the establishment of the first Working Group of Experts actually resulted in the adoption of the Protocol vide Decision V/29 of COP V in December, 1999. The Protocol on Liability and Compensation for Damage Resulting from the Transboundary Movements of Hazardous Wastes and their Disposal[58] (hereinafter called 'the Protocol') provides a comprehensive regime for liability and compensation for damage resulting from transboundary movements of hazardous and other wastes including illegal traffic. Each phase of transboundary movement, from generation to final disposal, has been covered. It is considered to be the first international environmental instrument to address the liability and

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56. Article 12 of the Basel Convention stated: 'The Parties shall co-operate with a view to adopting, as soon as practicable, a protocol setting out appropriate rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes and other wastes'.
57. Report of the Working Group on its 1st Session (UNEP / CHW / WG. 1/3), at 5.
58. For text *see* 41 IJIL, No. 1 (2001), at 167-84: 28 Ecology L.Q. 509 (2001): The websites are http://www.basel.int/pub/protocol.html: http://www.unep.ch/basel/COP5/docs/prot-e-.pdf.

compensation aspects of hazardous international activity. It applies Principle 13 of the 1992 Rio Declaration which called upon states 'to co-operate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction' The traditional enforcement mechanism of State responsibility, as reflected by the Principle, relies on the role of the State as guarantor of compliance with international obligations However, due to inherent practical and theoretical difficulties with State responsibility, alternative mechanisms have also become necessary and are to be evolved The emerging global waste management regime is no exception to this [59]

The Protocol provides a comprehensive regime of liability and compensation for damage[60] resulting from the transboundary movement of hazardous wastes and other wastes[61] and their disposal including illegal traffic [62] The Protocol envisages both strict and fault-based liability, depending on the circumstances in which environmental damage occurs The fixing of strict liability depends on the actual occurrence of the damageable incident and is channeled to the person

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59 KATHARINA KUMMAR, INTERNATIONAL MANAGEMENT OF HAZARDOUS WASTES THE BASEL CONVENTION AND RELATED LEGAL RULES, 210 (Oxford, 1995)

60 The Protocol contains a rather broad definition of 'damage' for which compensation may be sought "Damage" means (i) loss of life or personal injury, (ii) loss of or damage to property other than property held by the person liable in accordance with the present Protocol, (iii) loss of income directly deriving from an economic interest in any use of the environment, incurred as a result of impairment of the environment, taking into account savings and costs, (iv) the costs of measures of reinstatement of the impaired environment, limited to the costs of measures actually taken or to be undertaken, and (v) the costs of preventive measures, including any loss or damage caused by such measures, to the extent that the damage arising out of or results from hazardous properties of the wastes involved in the transboundary movement and disposal of hazardous wastes and other wastes subject to the Basel Convention [Article 2(2)(c)]

61 "Hazardous wastes and other wastes" means hazardous wastes and other wastes within the meaning of Article 1 of the Basel Convention [Article 2(2)(b)]

62 Article 1

who is in operational control of the wastes. During the initial phase, the person who is notifying the transport in accordance with Article 6 of the Basel Convention (the generator or the exporter) is liable for damage. This person remains liable until the designated waste disposer takes possession of the shipment. Thereafter, the disposer is liable for any damage which may occur.[63] According to Annex B of the Protocol, financial limits of strict liability should be determined by the domestic law of the State Parties. However, these limits should not be lesser than the minimum requirements set by the same Annex.[64] Annex B also requires the parties to review these limits on a regular basis, taking into account the potential environmental risks and the nature, quantity and hazardous properties of the wastes. The person strictly liable has to establish and maintain, during the period of the time limit of liability, insurance, bonds or other financial guarantees covering his liability.[65]

Without prejudice to the strict liability provision, the Protocol establishes a fault-based liability regime in case of any person disregarding the Basel Convention's requirements or acting in a wrongful intentional, reckless or negligent manner.[66] This fault-based liability is without financial limits.[67] However, there is a right of recourse against any other person also liable under the Protocol, or under a contractual agreement, or pursuant to the law of a competent Court.[68]

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63. Article 4(1). Article 4 also provides for specific rules in particular situations, such as cases of re-import of wastes.
64. Article 12(1).
65. Article 14(1).
66. Article 5.
67. Article 12(2).
68. Article 8.

Claims for compensation under the Protocol have to be brought within ten years from the date of the incident[69] or within five years from the date the claimant knew or ought reasonably to have known of the damage.[70] Where compensation does not cover the costs of damage, additional and supplementary measures may be taken by the contracting parties to ensure adequate and prompt compensation.[71] The contracting parties are also obliged to adopt transparent legislative, regulatory and administrative measures necessary to implement the Protocol without any discrimination.[72]

Claims for compensation under the Protocol may be brought in the courts of a contracting party only, where either the damage was suffered, or the incident occurred, or the defendant had his habitual residence or principal place of his business. Each contracting party has to ensure that its courts possess the necessary competence to entertain such claims for compensation.[73] The judgment of a competent court shall be recognised and enforced by the contracting parties.[74]

The transboundary movement of hazardous waste involves a wide range of participants and varying degrees of environmental or health risks. The provisions of the Protocol have the capacity to deter those who are involved in the mismanagement of hazardous wastes. It provides for a comprehensive liability regime and adequate and prompt compensation, including reinstatement of the damaged environment. However, the provision dealing

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69. Article 13(1).
70. Article 13(2).
71. *See* Article 15.
72. Article 10.
73. Article 17.
74. Article 21.

with the 'scope of application' of the Protocol lacks clarity and is a very complex one, having nine paragraphs and various sub-paragraphs.[75] Still the general rule as given in paragraph-1 is that the Protocol applies to damage due to an incident[76] occurring during a transboundary movement of hazardous wastes and other wastes and their disposal, including illegal traffic, from the point where the wastes are loaded on the means of transport in an area under the national jurisdiction of a state of export. Moreover, supplementary compensation is provided on an interim basis from a fund established by the Conference of the Parties. It is available only to developing state parties or economies in transition. This limitation is not a feature of other compensation schemes. Another difference is that the fund is financed by voluntary contributions from the parties to the Basel Convention. There is no requirement for industry to contribute.[77]

A number of States and NGOs have voiced serious criticisms of the Protocol. African states criticised the failure to provide an adequate and permanent compensation fund. Australia, Canada, and NGOs were concerned that parties to Article 11 agreements[78] could opt for alternative liability arrangements, thereby creating confusion and protracted litigation as to which liability regime is applicable. They also believed that channeling liability to the exporter /

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75. *See* Article 3.
76. 'Incident' means any occurrence, or series of occurrences having the same origin that causes damage or creates a grave and imminent threat of causing damage. [Article 2(2)(h)]
77. PATRICIA BIRNIE & ALAN BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT, 435-36 (2d ed. 2002)
78. Article11 - *Conflicts with other liability and compensation agreements*: 'Whenever the provisions of the Protocol and the provisions of a bilateral, multilateral or regional agreement apply to liability and compensation for damage caused by an incident arising during the same portion of a transboundary movement, the Protocol shall not apply provided the other agreement is in force for the party or parties concerned and had been opened for signature when the Protocol was opened for signature, even if the agreement was amended afterwards'.

notifier, rather than to the person in operational control (i.e. the waste generator), did not properly reflect the 'polluter pays' principle. Waste generators would be able to pass on the burden of liability to exporters, and would have less incentive to monitor disposal standards themselves. Leaving national law to determine maximum liability limits would also create further uncertainty and inconsistency, while the minimum limits based on waste tonnage would in some cases be too low, in other too high, depending on the nature of the waste. In their view, shared by others, these deficiencies were likely to delay ratification.[79] However, inspite of these criticisms, since legal instruments which impose meaningful liability for international environmental harms are rare in international law, the Protocol may still be considered as a 'major break through'.

7.3.2 *Hazardous Chemicals*

The Prior Informed Consent (PIC) procedure as provided in both voluntary (FAO Code of Conduct & amended London Guidelines) and binding (Rotterdam Convention) international legal instruments was clearly insufficient to reduce the risks from a number of hazardous chemicals in today's use.[80] This highlighted the need of an integrated international legal instrument to promote environmentally sound management of chemicals, especially in respect of developing countries, in accordance with the principle of 'common but differentiated responsibility' and the relevant provisions of Chapter 19 of Agenda 21.

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79. *supra* note 77, at 436.
80. *See supra* chapter-II

In addition to an internationally binding instrument for PIC, the international activities predominantly focussed on the development of a legal framework for persistent organic pollutants (POPs). The activities ultimately culminated into a globally binding instrument (POPs Convention)[81] which favoured a 'cradle-to-grave' approach and addressed the issues like health and environmental hazards caused by POPs from the moment of inception to disposal. It required continuous minimisation of total emissions of substances listed in Annex C and promotion and application of Best Environmental Practices (BEP) and Best Available Techniques (BAT) which should be reflected in the national implementation plans of the parties. However, many countries may find these requirements challenging since they have little knowledge of the sources of their emissions. Although the concepts of BEP and BAT seem familiar, their translation into practice can be difficult.[82] The lack of data on levels of chemicals in environment further impairs seriously the assessment of background exposures to chemicals as well as possible damages to human health and the ecosystem. Differences in procedures and measurement targets make existing data difficult to compare.[83] Moreover, considering the wide range of existing international programmes and initiatives as well as the multiplicity of fora where chemical management issues are discussed, there is a serious potential for overlap, duplication, and incoherent, and even incompatible, approaches to international chemicals management.[84]

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81. *Ibid.*
82. 6 UNEP Chemicals Newsletter, No. 2, 2 (December 2002).
83. *Ibid.*
84. *Hazardous Substances and Wastes, Other Than Nuclear*, 8 Yearbook of International Environmental Law, 241 (1997).

Besides the above stated complexities in international arena, a weak enforcement mechanism undermines the implementation efforts in international chemicals management. Implementation requires domestic legislation and enforcement of international policy where there is a wide gap between policy adoption and policy implementation. For example, individual firms or industrial sectors, due to their vested interests, may exert influence at the domestic level for non-adoption of such a policy. This inevitably produces disparity between international and domestic positions. The tension / imbalance at the international level (where policy is developed) and domestic / national level (where policy is given practical effect) ultimately results in the likelihood of implementation failure.[85]

Most of the chemical hazards which we face occur due to the incidents within the jurisdiction of the nation of which we are citizens. Valuation of the benefits and damage which the chemicals can cause, varies from country to country. It is for this reason that the regulation of chemicals is usually considered a matter for the national governments. However, where for example, hazardous chemicals are transported between nations, there is clearly an international hazard and international approach is needed to regulate the problem. The pollution that results from the manufacture or use of a chemical substance cannot be controlled by one country alone due to the transboundary nature of the releases into the environment or its trade in international markets.[86] That is why Chapter 19 of Agenda 21 stated as regards chemicals that risk

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85. For details as to relationship between international law and municipal law, *see* J.G. STARKE, INTRODUCTION TO INTERNATIONAL LAW, 71-91 (10th ed. 1989).
86. OECD Chemical Program, *Summary of OECD Experience with Risk Reduction*, Rome Workshop Room Document, 8 (November 1995).

management activities are primarily the responsibility of the national governments but that international risk reduction is warranted for problems that are international in scope. In these circumstances, the international efforts should ensure that the management of chemicals occurs at the level where it is most likely to deliver effective environmental outcomes, having regard to local exposures and evaluations.

The liability and compensation regime relating to hazardous chemicals appears to be very weak at the global level. The non-binding international agreements (the FAO Code of Conduct and London Guidelines) do not contain provisions regarding liability and compensation issues. Similarly, the binding instruments (Rotterdam Convention and POPs Convention) also do not have any sanctioning mechanisms. These are basically the information-generating treaties. These instruments should have contained specific provisions relating to sanctions and penalties. However, there are certain instruments which address the issue, but they are not yet in force. For example, 1996 HNS - International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (London) was adopted on 3rd May 1996. Under the Convention, a compensation upto 250 million SDR (about US $ 320 million) could be paid to the victims of accidents involving the transport of hazardous and noxious substances, but it is not yet in force. Likewise, at the regional level, the 1989 CRTD - UN / ECE Convention on Civil Liability for Damage Caused During Carriage of Dangerous Good by Road, Rail and Inland Navigation Vessels (Geneva), adopted on 10th October, 1989 established strict liability and uniform rules to ensure adequate and

prompt compensation for damage during the international and domestic carriage of dangerous goods. Financial liability of the road and rail carrier is limited to 18 million SDR for loss of life or personal injury and 12 million SDR for any other claim. The liability of the carrier of an inland navigation vessel is limited to 8 million SDR and 7 million SDR respectively. The 1993 Lugano Convention - Convention on Civil Liability for Damage Resulting From Activities Dangerous to the Environment (Lugano), adopted on 21st June, 1993 aimed at ensuring adequate compensation for damage resulting from activities dangerous to the environment and provided for the means of prevention and reinstatement. The dangerous activities include the activities relating to hazardous substances specified in Annex-I, genetically modified organisms and micro-organisms. The operator is strictly liable for damage caused during the period when he / she exercises control over that activity, and is required to maintain insurance. However, the above stated regional instruments are also not yet in force.[87]

Therefore, it appears that the issues relating to liability and compensation regarding hazardous chemicals have to be decided by the nation-states. They have to take actions by passing laws and providing administrative machinery on this account. International society lacks the machinery to implement sanctions. However, nation states can make their risk management decisions comparatively easily. These nation states can ensure implementation also. Various exposures to toxic, persistent and bioaccumulative substances occur at the national level. The individuals and industries responsible for chemical

87. *See Liability & Compensation Regimes Related to Environmental Damage: Review by UNEP Secretariat*, For an Expert Meeting, Geneva 23-25 (13th - 15th May, 2002).

hazards may be identified and costs imposed on them. An effective implementation of liability and compensation regime at the national level (based on international guidelines) can ensure better environmental protection and enhanced human welfare.

In addition to the mechanisms of international control, enforcement mechanisms adopted at the national level play an important part in the implementation of international obligations. Before discussing the Indian position, we will examine the liability and compensation models prevailing in two developed countries i.e. U.K. and U.S. which provide a comprehensive system for regulation and control of hazardous substances.

7.4 U.K. Model of Liability and Compensation

7.4.1 *Waste Management*

The Deposit of Poisonous Wastes Act, 1972 of Britain is considered to be one of the first controls over the deposit of hazardous waste in the world. It was soon supplemented by the Control of Pollution Act, 1974 which introduced a comprehensive system of waste management. However, the basic provisions concerning waste management are now contained in the Environmental Protection Act of 1990 (hereinafter called EPA), as amended by the Environment Act of 1995 and Regulation 19 and Schedule 4 of the Waste Management Licensing Regulations, 1994.[88] Section 33 of the EPA prohibits unauthorised or harmful depositing, treatment or disposal etc. of waste and makes the following a criminal offence:

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88. SI 1994 / 1056.

a) to deposit controlled waste,[89] or knowingly cause or permit controlled waste to be deposited in or on any land unless authorised by a waste management licence;

b) to treat, keep or dispose of controlled waste, or knowingly cause or permit controlled waste to be treated, kept or disposed of in or on any land, or by means of any mobile plant, except in accordance with a waste management licence; and

c) to treat, keep or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health (whether or not this is done in accordance with a waste management licence).

Section 33 also makes the contravention of any of the conditions of a waste management licence an offence and provides that where controlled waste is carried in and deposited from a motor vehicle, the person who controls or is in a position to control the use of the vehicle, shall be treated as knowingly causing the waste to be deposited whether or not he gave any instructions for this to be done. However, there are three defences available to a person charged with an offence under Section 33. He can escape conviction if he proves:

i. that he took all reasonable precautions and exercised all due deligence to avoid the commission of the offence; or

ii. that he acted under the instructions from his employer and neither knew nor had reason to suppose that he was doing a contravention; or

iii. that the alleged contravention was done in emergency in order to avoid danger to the public and that as soon as it became reasonably practicable, he informed the Environmental Agency.

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89. 'Controlled Waste' means household, industrial and commercial waste or any such waste [Section 75(4)]

EPA re-enacts, for all practical purposes, the relevant provisions of Control of Pollution Act, 1974 and the offence of knowingly permitting the deposit of controlled waste is one of strict liability. The employer or principal of a business may be held criminally liable, even though the deposit was due to the act or omission of an employee and without the employer's knowledge or even contrary to his orders.[90] In *Ashcroft* v. *Cambro Waste Products*,[91] it was held that when controlled waste had been deposited without being covered with earth, as required by the waste disposal licence, the prosecutor, in order to secure a conviction, had to prove only that the waste was controlled waste, that it had been deposited, and that in fact the deposit was not in accordance with the requirements of the licence.

Any person who commits an offence under Section 33 shall be liable :

a) on summary conviction, to imprisonment for a term not exceeding six months or a fine not exceeding £20,000 or both; and

b) on conviction on indictment, to imprisonment for a term not exceeding two years or a fine or both.

Any person who commits an offence under this Section in relation to special waste[92] shall be liable:

a) on summary conviction, to imprisonment for a term not exceeding six months or a fine not exceeding £20,000 or both; and

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90. DAVID WOOLLEY QC, JOHN PUGH SMITH, RICHARD LAUGHAM, WILLIAM UPTON, ENVIRONMENTAL LAW, 286 (2000).
91. (1981) 3 All ER 699. The decision in *Ashcroft case* was affirmed in *Shanks & Mc Ewan (Teesside) Ltd.* v. *The Environment Agency*, (1997) 2 All ER 332, and it was held that the word 'knowingly' under Section 33 only required knowledge of the deposit.
92. 'Special waste' means controlled waste in respect of which regulations are in force. [Section 75(9)].

b) on conviction on indictment, to imprisonment for a term not exceeding five years or a fine or both.

Section 34 of the EPA establishes a 'duty of care' regarding waste. Any person dealing with waste owes a duty to avoid pollution, harm to health, or the unlicensed deposit of waste and he can not transfer this duty to someone else. The Section requires that any person who imports, produces, carries, keeps, treats or disposes of controlled waste or, as a broker, has control of such waste, has to take all such measures applicable to him in that capacity as are reasonable in the circumstances --

a) to prevent any other person contravening Section 33;

b) to prevent the escape of waste from his own control and that of others; and

c) to transfer the waste only to an authorised person or to a person for authorised transport purposes, and along with such written description of the waste as will enable other persons to avoid a contravention of Section 33 and to comply with the duty of care.

However, the duty of care under Section 34 does not apply to an occupier of domestic property as respects the household waste produced on the property. The Secretary of State has power to prescribe how this duty of care is to be discharged. This power has led to the making of the Environmental Protection (Duty of Care) Regulations, 1991.[93] The Secretary of State has also issued a Code of Practice on the duty of care.[94] The Code is admissible in evidence in civil or criminal legal proceedings while determining whether there has been a

93. SI No. 2839.
94. Waste Management, The Duty of Care, A Code of Practice (HMSO, 1996).

breach of the duty. It is important to note that the statutory duty of care under EPA should not be confused with the duty of care in ordinary negligence cases. Since the statutory duty to take care of waste is owed to the society at large, breach of the duty of care under Section 34 is a criminal offence.

Sections 35-44 of the EPA provide for a comprehensive waste management licensing system. The Environment Agency has been vested with very broad powers in this regard along with a general duty to monitor and supervise licensed activities to ensure that the activities authorised by the licence do not cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality. There is a right of appeal to the Secretary of State against the orders passed by the Environment Agency.

Where the conditions of a licence require the holder of the licence to carry out any works or do any other thing which he is not entitled to carry out or do without the consent or right granted by any other person, such other person, if he grants or joins in granting, is entitled to compensation to be paid by the holder of the licence. This provision for the payment of compensation to third parties was added by the Environment Act of 1995 which incorporated Section 35A to this effect.[95] Moreover, if controlled waste is deposited in or on any land in contravention of Section 33(1), the authority may, under Section 59 of the EPA, require the occupier to remove the waste from the land and/or take steps to eliminate or reduce the consequences of the deposit of waste.

Therefore, Part-II of the EPA, 1990 which deals with waste management in U.K. is an example of a command and control regulatory regime. It requires

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95. *See* Waste Management Licences (Consultation and Compensation) Regulations, 1999 (SI 1999/481).

those persons (usually companies) who engage in waste management operations to obtain a waste management licence. The Environment Agency has significant administrative powers to ensure licence holders' compliance with the terms and conditions of their waste management licences. The Agency is also responsible for 'policing' the duty of care. These powers are important because they enable the Environment Agency to retain control over the enforcement process and help in creating a 'credle-to-grave' system of control Besides, Section 71 of the EPA empowers the Environment Agency to serve a request on any person in order to obtain information which may be relevant for the performance of its statutory responsibilities Failure to provide such information or knowingly providing false information is a criminal offence The maximum penalty on summary conviction in the Magistrate's Court for the breach of Section 71 is a £5,000 fine and if the matter is committed to the Crown Court, the maximum penalty is an unlimited fine and / or a sentence of two years. The above stated liability and compensation regime represents an integrated response to the problems associated with the high level of waste production in an industrialised society.

7 4 2 *Contaminated Land*

It was estimated that in 1993 there were between 50,000 and 100,000 potentially contaminated sites in the U.K (Parliamentary Office of Science and Technology Report, 'Contaminated Land'). The Environment Agency has estimated that there may be some 300,000 hectares of land in the U.K. affected by contamination.[96] The contamination of land may be due to a variety of commercial and industrial sources either as a result of accidents or through the

96. MAURICE SUNKIN, DAVID MONG, ROBERT WIGHT, SOURCEBOOK ON ENVIRONMENTAL LAW 480 (2d ed. 2001)

activities like landfilling. Contaminated sites have a number of potentially harmful substances which may be solids, in solution, liquids or gases. Substances such as heavy metals, e.g. cadmium, lead and copper; inorganic compounds, e.g. asbestos and sulphate; organic compounds, e.g. PCBs, dioxins and chlorinated hydrocarbons; and gases, e.g. methane, are some of the common contaminants. Inhibition of plant growth; contamination of surface water and ground water; human ingestion, inhalation or skin contact with the contaminants; and fire and explosions are some of the hazards associated with the contaminated land.

Part IIA of the EPA, 1990 which was inserted by Section 57 of the Environment Act, 1995 contains important provisions on contaminated land. Section 57 of the Environment Act, 1995 has inserted 28 new Sections after Section 78 of the EPA, 1990. There is a statutory definition of 'contaminated land' along with regulatory procedures for its control. Besides, the Contaminated Land (England) Regulations, 2000[97] deal with various procedural details, remediation notices and appeals. The basic policy of the U.K. Government regarding contaminated land may be summarised as under:[98]

- To identify and remove unacceptable risks to human health and the environment.
- To seek to bring damaged land back to beneficial use. And
- To seek to ensure that the cost burdens are proportionate, manageable and economically sustainable.

97. SI 2000/227.
98. *supra* note 96.

'Contaminated land' is defined as "any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, or under the land, that -

a) significant harm is being caused or there is a significant possibility of such harm being caused, or

b) pollution of controlled waters is being, or is likely to be, caused" [99]

'Harm' is defined as "harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property" [100]

The new regime in U K contains a series of provisions to address the issue from identification of contaminated land to securing its remediation In this process, the local authorities, Environment Agency and the Secretary of State play their respective and important roles Where the land is designated as a 'special site',[101] the enforcing authority is the Environment Agency rather than the local authority Where land has been designated as a special site or as contaminated land, the enforcing authority has to serve on the 'appropriate person' a 'remediation notice' specifying what is to be done by way of remediation and within what period [102] Remediation notice is the main tool for securing assessment and clean-up of the site Failure to comply with the remediation notice, without reasonable excuse, is an offence punishable on summary conviction by a maximum fine of £5,000 and a further fine of £500 per day if the failure continues after conviction Where the contaminated land in

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99 Section 78A(2)
100 Section 78A(4)
101 For definition of a 'special site', *see* Section 78A(3)
102 Section 78E(1)

question is 'industrial, trade or business premises', the fines are £20,000 and £2000 respectively [103] The remediation work may be carried out by the enforcement authorities themselves under certain circumstances and costs may be recovered from the polluter [104] Thus, the liability regime in U K relating to contaminated land implements the 'polluter-pays' principle

7 4 3 *Hazardous Substances*

The regulation of hazardous substances in U K was initially considered as part of the town and country planning code [105] However, subsequently the basic difference between land use planning and control of hazardous substances was realised and the Planning (Hazardous Substances) Act, 1990 (hereinafter called 'HSA') was enacted which came into force on 1st June, 1992 It lays down a system of control and enforcement over the keeping and use of potentially dangerous materials While discussing the control of hazardous substances, an obvious question which arises is 'what is a hazardous substance'? HSA is silent on this and for an answer one has to see Schedule 1 of the Planning (Hazardous Substances) Regulations, 1992[106] made by the Secretary of State under Section 40 of the HSA The Schedule lists seventy one substances which are to be treated as hazardous These entries are extremely technical and require specific scientific knowledge for comprehension However, for our purposes, the substances listed in Schedule 1 may be broadly classified into three categories, namely, toxic, highly reactive and explosive, and flammable In fact the substances listed are those which have a tendency to poison, burn or blow up

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103 *See* Section 78M
104 *See* Sections 78N & 78P
105 *See* Housing and Planning Act, 1986
106 SI NO 656

those who come into contact with them. The quality of each substance which renders it liable to control under the HSA is specified against each.[107]

The central theme of control under the HSA is that consent from the concerned hazardous substances authority is needed where a hazardous substance exceeding the amounts prescribed under the Hazardous Substances Regulations is present on land.[108] Keeping of hazardous substances on land without consent is a criminal offence, punishable on summary conviction by a fine upto £20,000 and by an unlimited fine on conviction on indictment.[109] Thus, broadly speaking, using or keeping hazardous substances in breach of the regulatory system laid down by the HSA is a criminal offence. A person may commit an offence under the following three situations:

1) If the hazardous substance exceeding the quantity prescribed by the Regulations is present on land and there is no consent at all.
2) If the hazardous substance exceeding the maximum quantity permitted by the consent order is present on land. And
3) If he knowingly commits a breach of condition attached to the consent. If he can show that he did not know, and had no reason to believe, that there had been a breach of a condition, this will be a defence.[110]

In addition and as an alternative to criminal prosecution for contravention of hazardous substances control, the HSA gives the hazardous substances authority a power to serve on the person a 'contravention notice' alleging that the control has been contravened and requiring such steps as it considers

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107. *Id.* Schedule 1 Col. 2.
108. Section 4(1).
109. Section 23(1), (4).
110. Section 23(2), (3).

appropriate to remedy the contravention, in whole or in part. The notice is to be served only if the authority considers it expedient to do so.[111] The authority may also itself enter on the land, take steps required by the notice to remedy the contravention, and recover costs from the polluter. Obstructing an authorised person working to secure compliance with the notice is a criminal offence and the expenses incurred may be made a charge on the land.[112] Moreover, the authority has power to obtain injunction if it considers it necessary or expedient for any actual or apprehended contravention of hazardous substances control. Both the High Court and any County Court have power to grant injunctions in such cases and they may be granted even against those persons whose identity is unknown.[113] Therefore, the regime confers on the authorities enormous powers in order to prevent the breach of law regulating hazardous substances.

7.4.4 *Genetically Modified Organisms*

Genetic engineering and modification of genes are the techniques used for the purpose of altering or improving the genetic characteristics of plants and animals. These improved gene combinations require 'artificial techniques'. They can not be achieved by 'traditional breeding techniques' or other natural methods. Genetically Modified Organisms (GMOs) have been used for a variety of purposes, for example, to breed pest resistant plants and short-stemmed cereals, control of oil spills, water purification and degrading chemicals in toxic waste. However, GMOs raise important issues about the protection of human health and the environment since they are capable of

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111. *See* Section 24.
112. *See* Hazardous Substances Regulations, Schedule 4, Part 5.
113. Section 26AA.

producing diseases and other harmful effects if they escape or fall into the wrong hands. Therefore, their creation, keeping, transport, sale or release into the environment have become a subject of legal control.

Part VI of the EPA, 1990 provides a detailed statutory framework aimed at preventing or minimising the damage to the environment which may arise from the escape or deliberate release of GMOs. It should be considered as an important and comprehensive regulatory code on GMOs, a rapidly developing area of science. A person releases an organism if he causes or permits it to cease to be under his control. The organism escapes if it ceases to be under the control of the person without his causing or permitting the release.[114]

GMO has been defined as 'any acellular, unicellular, or multicellular entity other than humans or human embryos, and includes any article or substance consisting of or including biological matter'. The 'biological matter' includes tissue, cells, genes, or other genetic material of any kind, which is capable of replication or transferring genetic material. An organism is genetically modified for the purposes of the EPA if any of its genes are modified by an artificial technique prescribed by the Secretary of State, or inherited or otherwise derived through any number of replications.[115] The Secretary of State has prescribed several techniques for this purpose and they are set out in Regulation 3 of the Genetically Modified Organisms (Deliberate Release) Regulations, 1992.[116].

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114. Section 107(10).
115. *See* Section 106.
116. SI No. 3280.

Any person who imports, acquires, releases, or markets any GMO must first carry out an assessment of the risks of damage to the environment inherent in the nature of the organism or in the way in which he proposes to deal with it. He must notify the Secretary of State of his intentions with respect to the GMO and provide such information as may be prescribed.[117] There is a general duty to take reasonable steps to identify the risks of damage to the environment as a result of the importation, acquisition or release of GMOs.[118] The Secretary of State is empowered to serve 'prohibition notices' where he has reason to believe that the import, acquisition, release, marketing, or keeping of any GMO involves a risk of damage to the environment. The notice may require the person to dispose of the GMO in question as quickly and safely as practicable, or to deal with it in the way specified in the notice.[119]

For the import, acquisition, release or marketing of any GMO, the consent of the Secretary of State is needed with a heavy burden on the applicant to provide all the required information.[120] Every consent includes an implied condition that the holder shall take all reasonable steps to keep himself informed about the scientific progress, researches and new techniques in the field designed to minimise the risks of damage to the environment. The principle of BATNEEC applies, namely that the GMOs must be kept using the best available techniques not entailing excessive cost.[121]

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117. Section 108.
118. Section 109.
119. Section 110.
120. *See* Section 111.
121. *See* Section 112.

The Secretary of State has power to appoint qualified persons to act as inspectors for the purpose of implementing Part VI of the EPA. The inspectors have powers to enter and inspect any premises, seize and retain any documents and carry out the tests of any equipments. The Secretary of State, who acts on the advice of and in concert with the inspectors, may give written notice requiring any person, whether he is the holder of a consent or not, and who appears to be involved in importing, acquiring, keeping, releasing, or marketing of GMOs, to furnish required information about any aspect of those activities.[122]

Failure to comply with the requirements of Part VI of the EPA is a criminal offence. The Act distinguishes between more serious category of offences, punishable on summary conviction with a fine of upto £20,000 or six months imprisonment, or both (or an unlimited fine and five years imprisonment on conviction on indictment), and the less serious, punishable on summary conviction with the statutory maximum fine or six months imprisonment (or an unlimited fine and two years imprisonment on conviction on indictment). The more serious offences are those of using or otherwise dealing with GMOs without consent or in breach of the conditions of a consent; failure to carry out risk assessments and to use BATNEEC; and contravention of a prohibition notice.[123] The courts have been given a rather unusual power in case of a person convicted of an offence connected with risk assessment, a consent or lack of it, or a prohibition notice. The Court may order such a person to take steps to remedy the consequences of the act or omission leading to the conviction. This will be in addition to the power to fine or imprison. The

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122. Section 115.
123. *See* Sections 118 & 119.

Secretary of State may also himself make arrangements for the remediation work and recover the costs from the convicted person.[124]

Therefore, the provisions under the EPA provide an effective legal regime to ensure that GMOs imported, acquired or kept pose no risk to human health or the environment. The onus lies on those keeping the GMOs under their control to provide safe working practices to prevent environmental damage. The Secretary of State has wide powers to ensure compliance.

7.5 U.S. Model of Liability and Compensation

7.5.1 *Waste Management*

More than six billion tons of agricultural, commercial, industrial and domestic wastes are produced in the United States each year which pose health or environmental problems.[125] Environmental officials recognised that merely shifting pollutants from one medium to another and the approaches like 'out of sight, out of mind' present a serious threat to public health and the environment. U.S. Congress eventually responded to this concern and enacted laws requiring 'cradle-to-grave' regulation of hazardous waste and imposing strict liability on parties responsible for releases of hazardous substances. Two federal statutes - the Resource Conservation and Recovery Act, 1976 (RCRA) also known as Solid Waste Disposal Act and the Comprehensive Environmental Response, Compensation, and Liability Act, 1980 (CERCLA) also known as the Superfund Legislation - provide a comprehensive regime for the management of hazardous substances. RCRA provides for cradle-to-grave

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124. Sections 120 & 121.
125. EPA, ENVIRONMENTAL PROGRESS AND CHALLENGES: EPA'S UPDATE, 79 (1988).

regulation of hazardous waste, while CERCLA imposes strict liability for the clean up of releases of hazardous substances. RCRA employs a regulatory approach, while CERCLA is founded on strict liability approach. These different approaches can be used to prevent and to remediate environmental contamination and in this sense both the statutes can be said to be complementary to each other.

RCRA was substantially revised in 1984 by the Hazardous and Solid Waste Amendments (HSWA) and regulatory powers of U.S. Environmental Protection Agency (EPA) were sufficiently strengthened so that the fundamental objectives of RCRA could be achieved. The basic aim of HSWA was to restrict the disposal of hazardous wastes on land CERCLA was substantially amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). SARA attempted to address the shortcomings of CERCLA. Its significant provisions include the establishment of detailed clean up standards (Section 121(d)), provisions to expand the involvement of states and citizen groups in the decision making process (Sections 121(f) and 117), new settlement procedures (Section 122) and the establishment of mandatory schedules for federal facility compliance (Section 120). Under Section 121(b) of SARA, the EPA must choose a remedial plan that permanently and significantly reduces the volume, toxicity or mobility of hazardous substances.

7.5.1.1 *Resource Conservation and Recovery Act, 1976* : RCRA, as the name suggests, is designed to encourage the recovery of useful materials from wastes through processes like recycling and reuse and thereby minimising the amount of waste generated, as well as to ensure proper management of hazardous

waste.[126] Reduction or elimination of the generation of hazardous waste as expeditiously as possible 'wherever feasible' and management of waste that is nevertheless generated in a manner that minimises threats to health and the environment have been declared as a national policy.[127] Hazardous solid wastes and non-hazardous solid wastes have been distinguished for the purposes of regulation. Subtitle C of the RCRA covers hazardous waste while Subtitle D addresses non-hazardous solid wastes. The responsibility for controlling the management of non-hazardous solid wastes is largely the domain of state and local governments.[128]

'Solid waste' includes 'any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations, and from community activities.[129] The definition excludes nuclear and its by-product material as defined in the Atomic Energy Act of 1954. 'Hazardous waste' is defined as 'a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may --

A) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

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126. Section 1003(a) (4), (6).
127. Section 1003(b).
128. For EPA's revised Subtitle D criteria, *see* Section 4010(C). 'Non-hazardous solid wastes' include mining waste, garbage generated by households, non-hazardous industrial waste, and waste from small generators of hazardous waste.
129. Section 1003(27).

B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed'.[130]

Section 3001 of the RCRA requires EPA to develop criteria for determining what is a hazardous waste 'taking into account toxicity, persistence, and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics' and to list wastes determined to be hazardous. The 'mixture rule' and the 'derived-from' rule apply to hazardous wastes. The mixture rule provides that any mixture of a listed waste with other solid waste would itself be considered to be a hazardous waste. The derived-from rule provides that waste derived from the treatment, storage, or disposal of a listed waste shall be deemed to be hazardous waste. Therefore, wastes specifically listed as hazardous, wastes that exhibit any of the four hazardous characteristics e.g. ignitability, corrosivity, reactivity, or toxicity, and wastes mixed with or derived from a listed waste are hazardous wastes for the purposes of RCRA.

The extensive and stringent regulatory controls prescribed by Subtitle C of RCRA apply to solid wastes which are hazardous. A detailed regulatory regime has been established for identifying and listing hazardous wastes, a cradle-to-grave tracking system, standards for generators and transporters of hazardous wastes and for operators of treatment, storage and disposal (TSD) facilities and a permit system to enforce the standards.[131] Under Section 7003, the Government can sue to enjoin activities causing 'imminent and substantial

130. Section 1004(5).
131. *See* Sections 3001 to 3005.

endangerment' and compel clean ups. To establish a *prima facie* case of liability, the Government must establish following three elements:[132]

1) that the conditions at the site present an imminent and substantial endangerment,

2) that the endangerment stems from the handling, storage, treatment, transportation, or disposal of any solid or hazardous waste; and

3) that the defendant has contributed or is contributing to such handling, storage, treatment, transportation, or disposal.

In addition, in 1984, 'corrective action' requirements were imposed on all the TSD facilities. As per these requirements, all the facilities seeking to obtain or maintain permits under RCRA have to undertake corrective action to clean up any prior contamination at their sites.[133] Although RCRA, as amended, does not clearly guide as to how corrective action should be undertaken, EPA has developed the programme through various regulations and guidance documents.[134] The duty to take corrective action has been held to be a *quid pro quo* to obtaining a permit.[135] EPA has an authority to require corrective action by interim status facilities[136] also which choose to close rather than apply for a final RCRA permit. Failure to comply with the order of the EPA requiring corrective action by an interim status facility, may result in a civil penalty of upto $25,000 per day.[137]

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132. *United States* v. *Bliss*, 667 F. Supp. 1298 (E.D. MO. 1987) at 1313.
133. *See* Sections 3004 (u), 3004 (v) and 3008 (h).
134. *See* 50 Fed. Reg. 28, 702 (1995); 52 Fed. Reg. 45, 788 (1987); and 52 Fed. Reg. 23, 447 (1987).
135. *United Technologies Corp.* v *EPA*, 821 F. 2d 714 (D.C. Cir. 1987).
136. Interim status facilities are those which have been authorised to operate prior to the approval of a RCRA permit.
137. Section 3008(h).

RCRA imposes criminal liability on a person if he knowingly --

1. treats, stores, or disposes of hazardous waste without a permit, or transports a hazardous waste to a facility that does not have a permit; or
2. generates, handles, stores, treats, transports, or disposes of hazardous waste and knowingly destroys, alters or conceals required records; or
3. makes a false statement, misrepresentation, or material omission in any permit application, permit, manifest, record, report or label; or
4. transports hazardous waste without a manifest; or
5. exports hazardous waste without the consent of the receiving country or in violation of an international agreement.

The offences listed in (1) above are subject to a fine upto $50,000 per day of violation and / or upto five years in prison. The remaining offences carry a fine upto $ 50,000 per day of violation and / or upto two years in prison. A second conviction doubles the fine and prison sentence. If the violator knows that the violation places another person in imminent danger of death or serious bodily injury, he is subject to a fine upto $250,000 and / or imprisonment upto fifteen years. Organisations that knowingly endanger persons as a result of a violation are subject to fines upto $1,000,000.[138]

Section 7002 authorises citizens to bring suit against an EPA Administrator who fails to perform any duties made mandatory by the Act, against those who violate RCRA regulations or permits and also against any one who has contributed or is contributing to the past or present handling of any solid or

138. *See* Section 3008.

hazardous waste that may present an imminent and substantial endangerment to health or environment.

In a nutshell, RCRA governs the generation, treatment, disposal, storage and transport of solid and hazardous waste. It is designed to prevent improper disposal of hazardous wastes. The fundamental object is to prevent future environmental harms through the expedient remediation of contaminated land. *It provides a 'cradle-to-grave' system for the management of hazardous* wastes. The stringent provisions under Subtitle C and 'corrective action' requirements may be effectively used to clean up any contamination. The government officials as well as citizens can bring action against violators. Thus, the fundamental concepts of responsibility and accountability have been incorporated and it is hoped that RCRA will continue to prevent pollution and ensure prompt remediation of contaminated property.

7.5.1.2 *Comprehensive Environmental Response, Compensation and Liability Act, 1980* : The consequences of decades of poor waste management practices in the U.S. became apparent with the incidents like the Love Canal disaster. Carcinogenic chemicals improperly disposed of decades earlier began to ooze out of the ground and into the homes of residents of the site, known as Love Canal. A school and 100 homes were built on the site. The oozing resulted in adverse health effects ranging from headaches to birth defects in the area. Ultimately, 1000 families were relocated and homes along the canal were demolished.

Love Canal became a national media event and public outcry pushed U.S. Congress, in 1980, to enact the 'most radical environmental statute in

American history'.[139] This statute i.e. Comprehensive Environmental Response, Compensation and Liability Act (hereinafter called 'CERCLA' or 'the Act') is designed to remedy the problems created by years of unregulated disposal of hazardous substances,[140] to impose strict liability on all those involved in the 'releases'[141] of such substances and to ensure that such releases are cleaned up. The U.S. Congress passed CERCLA 'to combat the increasingly serious problem of hazardous substance releases'.[142] Every one who is potentially responsible for hazardous waste contamination may be forced to contribute to the costs of clean up.[143] CERCLA authorises EPA to use Superfund[144] resources to fund the clean up of hazardous waste sites and spills.[145] The EPA can then sue any responsible party it can locate for reimbursement of the clean up costs, thus reserving use of the Superfund for situations when sites have been abandoned, responsible parties can not be located, or private resources of the parties are inadequate.[146]

The potentially responsible parties (PRPs) who are subject to clean up liability are listed in Section 107(a) of the CERCLA and include:

- the current owners and operators of facilities where hazardous substances are released or threatened to be released;

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139. *Developments in the Law - Toxic Waste Litigation*, 99 Harv. L. Rev., 1458, 1465 (1986).
140. For broad definition of 'hazardous substance', *see* Section 101(14) of the CERCLA which includes hazardous wastes subject to regulation under Subtitle C of RCRA.
141. For definition of 'release' *see* Section 101(22) of CERCLA.
142. *United States* v. *Monsanto Co.*, 858 F. 2d. 160, 167 (4th Cir. 1988).
143. *Pennsylvania* v. *Union Gas Co.*, 109 S.Ct. 2273 (1989) at 2285.
144. The Superfund is the $1.6 billion Hazardous Substance Response Trust Fund which was established by the Congress to provide financial aid in the clean up of hazardous waste sites. By the 1986 Amendments (SARA), the size of the Fund has been expanded to $8.5 billion.
145. Section 111.
146. *New York* v. *Shore Realty Corp.*, 759 F. 2d 1032, 1041 (2nd Cir. 1985).

- the persons who owned or operated a facility at the time at which such hazardous substances were disposed of;
- persons who arranged for disposal, treatment, or transport of such substances; and
- persons who transported such substances for their storage, treatment or disposal.

Section 107(a) of the Act establishes a strict liability scheme.[147] The PRPs are liable for :

a) all costs of removal or remedial action incurred by the federal government not inconsistent with the National Contingency Plan (NCP);[148]

b) any other necessary costs of response incurred by any person consistent with the NCP;

c) damages for injury to natural resources; and

d) costs of health assessments.

CERCLA imposes civil penalties, three fold damages and criminal penalties. Section 109 of the Act imposes civil penalties which may range from $25,000 to $75,000 per day. Section 107(c)(3) provides that if any person who is liable for a release or threat of release of a hazardous substance fails, without sufficient cause, to properly provide removal or remedial action as required by

147. *supra* note 142. *See also Nurad. Inc.* v. *William E. Hooper & Sons Co.*, 966 F. 2d 837, 841 (4th Cir. 1992); *Levin Metals Corp.* v. *Parr-Richmond Terminal Co.*, 799 F. 2d 1312, 1316 (9th Cir. 1986); *A&W Smelter & Refiners. Inc.* v. *Clinton*, 146 F. 3d 1107 (9th Cir. 1998); *Carson Harbor Village Ltd.* v. *Unocal Corp.*, 227 F. 3d 1196 (9th Cir 2000).

148. NCP is prepared under Section 105 of CERCLA to provide comprehensive procedures for dealing with hazardous substance releases.

the EPA pursuant to CERCLA Section 104[149] or Section 106,[150] such person may be liable to the United States for punitive damages in an amount at least equal to, and not more than three times, the amount of any costs incurred by the Fund as a result of such failure to take proper action. Besides, Section 103 of CERCLA requires responsible persons to properly notify the EPA of a release and the existence of hazardous substance sites. If 'any person in charge' fails to report a release of a hazardous substance to the National Response Center, he can be punished by a fine of upto $250,000 and imprisonment for upto three years.[151]

CERCLA imposes strict, joint, and several liability on the responsible parties. Strict liability relieves the Government of the obligation to prove that hazardous substances were released as a result of negligence or that the defendant's conduct was intentional and unreasonable. It gives the Government a real chance of recovering response costs and ensures that those who engage in activities that inevitably produce some environmental damage would bear the costs of such damage.[152] Under Common Law rules, when two or more persons act independently to cause a single harm for which there is a reasonable basis of apportionment according to the contribution of each, each is held liable only for the portion of harm that he causes. When such persons cause a single and indivisible harm, however, they are held liable jointly and severally for the

149. Section 104 authorises the EPA to undertake removals or remedial action consistent with the NCP to respond to actual or potential releases of hazardous substances.
150. Section 106 authorises issuance of administrative orders requiring the abatement of actual or potential releases that may create imminent and substantial endangerment to health, welfare, or the environment.
151. Section 103(b).
152. *See United States* v. *Chapman*, 146 F. 3d 1166 (9th Cir. 1998).

entire harm In *United States* v *Monsanto Co*,[153] the Court held that these principles, as reflected in the Restatement (Second) of Torts, Section 433A (1965), represent the correct and uniform federal rules applicable to CERCLA cases Where the conduct of two or more persons liable under CERCLA has combined to violate the statute, and one or more of the defendants seeks to limit his liability on the ground that the entire harm is capable of apportionment, the burden of proof as to apportionment is upon each defendant [154] When the environmental harm was 'indivisible', all the defendants were jointly and severally liable for the Government's response costs [155] Thus, the courts have continued to impose joint and several liability on a regular basis reasoning that where all of the contributing causes can not fairly be traced, Congress intended for those proven at least partially culpable to bear the cost of the uncertainty [156]

Therefore, CERCLA is one of the chief means of controlling and remedying the problems associated with hazardous substances in the U S The Act imposes liability if a hazardous substance is released, or threatened to be released, such release or threat has caused some one to incur response costs, and the party from whom the costs are to be recovered falls within one of the four categories of PRPs Response costs may be incurred by a private party or the federal government Once the Government or a private party has spent money to clean up the hazardous substance problems caused by a PRP, CERCLA provides a mechanism to recover the response costs Liability under the Act is strict, joint,

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153 *supra* note 142

154 *United States* v *Conservation Chemical Co*, 589 F Supp 59, 63 (W D Mo 1984), *See also Boeing Co* v *Cascade Corp*, 207 F 3d 1177 (9th Cir 2000)

155 *United States* v *South Carolina Recycling & Disposal, Inc*, 653 F Supp 984 (D S C 1984)

156 *See United States* v *Chem-Dyne Corp*, 572 F Supp 802, 809-810 (S D Ohio 1983)

and several. Although the Original Act of 1980 did not contain any reference to joint and several liability, courts soon interpreted the Act as providing strict, joint, and several liability. The fundamental object of this type of liability scheme is to ensure that parties handling hazardous substances adopt proper disposal practices or otherwise bear the costs of clean up. Since the cost of clean up is far greater than the cost of proper disposal, safer disposal of hazardous substances has been encouraged.

7.5.2 *Control of Toxic Substances*

Besides the above stated liability regime for the proper management and control of hazardous substances, potentially toxic substances have also been extensively and specifically regulated in the U.S. 'Toxic substances' may be loosely defined as 'substances capable of causing adverse human health or environmental effects under anticipated conditions of exposure'.[157] The term 'toxic' is applied on the basis of the ability of a substance to cause serious adverse health and environmental effects at low levels of exposure. The toxic effects of chemicals on human health may range from irritation and skin rashes to carcinogenesis and death.

Concerns over the unknown health effects of toxic substances resulted in the enactment of many federal laws which are listed in the following table.[158]

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157. M. Shapiro, *Toxic Substances Policy in Public Policies for Environmental Protection*, 195, 196 (P. Portney ed., 1990).
158. *Source* - ANDERSON, GLICKSMAN, MANDELKER, TARLOCK, ENVIRONMENTAL PROTECTION, LAW & POLICY 839 (3d ed. 1984).

Table

Federal Laws Related to Exposure to Toxic Substances*

Legislation	Area of Concern
Food, Drug and Cosmetic Act	Food, drugs, food additives, color additives, new drugs, animal and feed additives, and medical devices.
Federal Insecticide, Fungicide and Rodenticide Act	Pesticides.
Dangerous Cargo Act	Water shipment of toxic materials.
Atomic Energy Act	Radioactive substances.
Federal Hazardous Substances Act	Toxic household products.
Federal Meat Inspection Act	Food, feed, color additives, and pesticides residues
Poultry Products Inspection Act	
Egg Products Inspection Act	
Occupational Safety and Health Act	Workplace toxic chemicals.
Poison Prevention Packaging Act	Packaging of hazardous household products.
Clean Air Act	Air pollutants.
Hazardous Materials Transportation Act	Transport of hazardous materials.
Clean Water Act	Water pollutants.
Marine Protection, Research, and Sanctuaries Act	Ocean dumping.
Consumer Product Safety Act	Hazardous consumer products
Lead-Based Paint Poison Prevention Act	Use of lead paint in federally assisted housing.
Safe Drinking Water Act	Drinking water contaminants.
Resource Conservation and Recovery Act	Solid waste, including hazardous wastes.
Toxic Substances Control Act	Hazardous chemicals not covered by other laws, including pre-market review.
Federal Mine Safety and Health Act	Toxic substances in coal and other mines.
Comprehensive Environmental Response, Compensation, and Liability Act	Hazardous substances, pollutants, and contaminants.

* Dates of enactment and amendment omitted.
Note: In the table, the Emergency Planning and Community Right-to-Know Act (EPCRA) may also be added. EPCRA was enacted by the U.S. Congress in 1986 in response to Bhopal disaster in India. The Act establishes a comprehensive regime for emergency planning and the reporting of chemical releases.

It is not feasible to cover all the laws listed above. However, the Toxic Substances Control Act of 1976 (TSCA) deserves a brief mention since it is considered to be the legal basis for chemical strategy in the U.S.[159] TSCA grants EPA broad powers to promulgate and enforce regulations specifying testing, reporting, and record keeping requirements for manufacturers and processors of chemical substances. EPA also has the power to restrict, regulate and prohibit the manufacture, handling, processing, and distribution of chemical substances that present an unreasonable risk of injury to human health or the environment.[160] It is unlawful for any person to fail to comply with the provisions of TSCA or any of the EPA's regulations, including reporting and record keeping requirements. The use of any chemical substance or mixture for commercial purposes has also been forbidden if there is a reason to know that the substance was manufactured, processed, or distributed in violation of any of the conditions imposed by the EPA.[161] The EPA can bring an action in a federal Court for specific enforcement and for seizure of chemicals manufactured, processed, or distributed in violation of TSCA. The primary tool for enforcement is the assessment of administrative penalties under Section 16 of the Act. Citizens can also bring action against any person violating the Act or against EPA Administrator to compel him to perform his duties under TSCA.[162] A penalty of $25,000 can be imposed for each violation and each day counts as a separate violation.

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159. Dr. Harald Ginzky, *EU and US Chemical Strategies under Reform: A Comparison of Strengths and Weaknesses*, 10 RECIEL, 200 (2001).
160. Sections 3-6.
161. Section 15.
162. Section 20.

The assessment of administrative penalty by the EPA is a mandatory prerequisite under Section 16(a) of TSCA to a penalty action in the federal Court. In this first mandatory stage, EPA has wide discretion in assessing the amount of the penalties and enforcing payment of the penalty. The nature, circumstances, extent, and gravity of the violation; the violator's ability to pay; and the violator's prior compliance record are some of the factors which may be taken into account in assessing the penalty. EPA's administrative action begins by filing an administrative complaint before an administrative law judge (ALJ) who assesses the penalty on behalf of EPA by issuing an order. The EPA or the violator can prefer an appeal against the order to the Environmental Appeals Board. If the alleged violator still feels that he has not committed a violation or that the penalty is excessive, he can contest the EPA's action in the U.S. Court of Appeals. The assessed penalty becomes final if the alleged violator chooses not to appeal or when the Court of Appeal delivers the final judgment. Thereafter, the violator must pay the penalty without any delay otherwise interest begins to accumulate. If he fails to pay the penalty, the Attorney General would file an action in the district Court on behalf of EPA to recover the assessed amount plus accumulated interest. At this stage, the Court can not review the validity, amount, or appropriateness of the penalty and its only function is to implement the EPA's decision.

Therefore, TSCA launches a comprehensive programme to anticipate and forestall injury to health and the environment from activities involving toxic chemical substances. Congress structured the Act to fill 'conspicuous gaps' in the protection afforded by preexisting 'fragmented and inadequate' statutes, ...

and committed administration of the Act to EPA.[163] The assessment proceeding by the EPA which seeks to impose civil penalties is a prerequisite to, and thus a part of, the measures for the enforcement of a civil penalty.[164] Immediately upon the violation of TSCA, EPA may institute the proceeding to have the penalty imposed.[165] Polychlorinated biphenols (PCBs)and asbestos have been extensively regulated under TSCA. PCB's use is heavily restricted because PCBs have been thought to be highly toxic and their release into the environment is typically difficult and expensive to clean up.

7.6 Statutory Liability and Compensation Regime in India

Articles 21, 48A and 51A(g) as well as various entries in the three lists of the Constitution of India constitute the kernel of Indian legal system in respect of environment. The judicial enthusiasm has further strengthened the constitutional mandate. Since hazardous substances have significant potential to disturb the environment and thereby cause severe damage to human health and other living creatures, the persons or institutions charged with their mishandling and mismanagement have to face legal consequences. They may be asked to compensate the victims and to reinstate the damaged environment. Besides their liability under the Constitution, civil and criminal liability may be imposed on them under different general and special statutes dealing with the subject in India. The civil liability can be enforced through legal proceedings by way of a traditional civil suit for damages under Section 9 of the Code of Civil Procedure, 1908 (C.P.C) or class actions under Order 1, Rule 8 of the C.P.C.

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163. *See Environmental Defense Fund* v. *Reilly*, 909 F. 2d 1497 (D.C. Cir. 1990).
164. *Mullikin* v. *United States*, 952 F. 2d 920 (6th Cir. 1991).
165. *3M Company (Minnesota Mining and Manufacturing)* v. *Browner*, 17 F. 3d 1453 (D.c. Cir. 1994).

or a suit filed in the district Court for declaration and injunction under Section 91 of the C.P.C. Moreover, civil liability provisions have been specifically incorporated under certain statutes. For example, under the Offshore Areas Mineral (Development and Regulation) Act, 2002, the civil liability provision for contravention of general terms and conditions includes a mandatory minimum amount of five lakh rupees and which may extend to one crore rupees to be paid to the Central Government. For contravention of particular terms and conditions, an additional amount of not less than one lakh rupees and which may extend to ten lakh rupees has to be paid. However, the main thrust of the statutory liability regime in India appears to be on penal liability. This includes the payment of fines which may range from two hundred rupees to one crore rupees and sentence of imprisonment which may range from one month imprisonment to life imprisonment depending upon the trivial nature or gravity of the offence charged. In case of an offence involving 'special category explosive substance' under the Explosive Substances Act, 1908, even death penalty may be imposed. Besides, there are provisions for the imposition of mandatory minimum fine and imprisonment. The Indian judiciary has also tried to enforce the provisions relating to liability and compensation under these statutes in spirit.[166] Many of these enactments establish an administrative set up also to enforce the provisions. Moreover, the Indian legal regime specifically incorporates 'precautionary principle' and 'polluter-pays principle' by declaring these principles as part of the law of the land. These principles have been recognised by the courts of the land as fundamental objectives of the governmental policy to prevent and control pollution caused by hazardous substances.

166. For detailed discussion of the relevant provisions relating to liability vis-a-vis judicial response, *see supra* chapters V & VI.

In India, the legislature has enacted three Acts, namely, the Water Act, Air Act and EPA to deal with the problems of water pollution, air pollution and environmental degradation in general respectively. These three special statutes along with the rules framed and notifications issues thereunder endeavour to protect and improve the environment. The rules and notifications issued under the enabling provisions of the EPA relating to hazardous waste, solid waste and hazardous chemicals are of far reaching importance. A comprehensive scrutiny of the provisions of these three statutes reveals that our environmental law operates on a deterrent theory of criminal justice administration. A person contravening the provisions of any of the three Acts may be prosecuted and punished with imprisonment and fine or both. For example, the Water Act was enacted with the purpose for the prevention and control of water pollution and maintaining and restoring of wholesomeness of the water. Major sources of pollution of our water resources are the industrial and community wastage which cause threat to the water courses rendering them unfit for human consumption.[167] The very object of the Act is to ensure that the water which is a very essential natural resource available to the society is maintained in its purity, that some powerful, influential and greedy persons do not corner the same for themselves and do not cause pollution to the detriment of the society at large. It is for protecting the interest of the society and for ensuring the ecological preservation of nature that such enactments are made. When the industry flouts various provisions of the Act and conditions imposed thereunder only for its own benefit, such act can not be entertained at the cost of the

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167. *Maharaja Shri Umaid Mills Ltd., Pali* v. *State of Rajasthan*, AIR 1998 Rajasthan 9.

society at large.[168] For restraining the person or industrial concern from causing water pollution, the Water Act provides for stiff penalties for violation of its provisions including mandatory minimum imprisonment and fines.

Likewise, a person violating the provisions of the Air Act may also be dealt with severely. For example, in *M.C. Mehta* v. *Union of India*,[169] despite orders of the Court regarding closure / relocation and allotment of an alternative site, the respondent continued running his hot mix plant industry (a hazardous and noxious industry) in the city of Delhi. The Court observed that he has violated not only the Court's orders but also the provisions of the Air Act. Finding him guilty of Contempt of Court, the apex Court held :

> The pollution of air is causing deleterious effect on the health of the entire society. We have also considered the larger interest of the society and orders passed by this Court are for the interest of the society at large. Liberty of an individual which is so dear to every citizen of this country must necessarily be balanced with his duties and obligations towards his fellow citizens. Every citizen of this country has freedom to breathe unpolluted air. In air pollution-related matter or in any matter relating to environmental hazard, if the orders of the highest Court are disobeyed as sought to be done in this case, the health of the entire society is at great risk. We are, therefore, convinced to send strong signal by imposing exemplary punishment so that like-minded people would not repeat and such recurrence is thwarted....[170]

In this background, the Court sentenced the contemnor, a 53 years old industrialist, to one week simple imprisonment and directed him to deposit costs amounting to Rs. 1 lakh.

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168. *M/s Stella Silks Ltd.* v. *State of Karnataka*, AIR 2001 Karnataka 219.
169. (2003) 5 SCC 376.
170. *Id.* at 387-388.

In *Indian Council for Enviro-Legal Action case*,[171] the Court, while referring to Sections 2(a), 3, 4 and 5 of the EPA, observed that these provisions empower the Central Government to take all measures and issue all such directions as are necessary or expedient for the purpose of protecting and improving the quality of the environment. The Court held :

> ...In the present case, the said powers will include giving directions for the removal of sludge, for undertaking remedial measures and also the power to impose the cost of remedial measures on the offending industry and utilise the amount so recovered for carrying out remedial measures. This Court can certainly give directions to the Central Government / its delegate to take all such measures, if in a given case this Court finds that such directions are warranted. We find that similar directions have been made in a recent decision of this Court in *Indian Council for Enviro-Legal Action case*, (1995) 3 SCC 77. That was also a writ petition filed under Article 32 of the Constitution. Following is the direction:
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> 'It appears that the Pollution Control Board had identified as many as 22 industries responsible for the pollution caused by discharge of their effluents into Nakkavagu. They were responsible to compensate to farmers. It was the duty of the State Government to ensure that this amount was recovered from the industries and paid to the farmers'.
>
> ...Sections 3 and 4 of the EPA confer upon the Central Government the power to give directions of the above nature and to the above effect. Levy of costs required for carrying out remedial measures is implicit in Sections 3 and 4 which are couched in very wide and expansive language. Appropriate directions can be given by this Court to the Central Government to invoke and exercise those powers with such modulations as are called for in the facts and circumstances of this case.[172]

The EPA, the Water Act and the Air Act have enough provisions applicable not only to new industries proposed to be established but also to the existing industries.[173]

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171. *supra* note 9.
172. *Id.* at 243, 247.
173. *A.P. Pollution Control Board II* v. *Prof. M.V. Nayudu (Retd.)*, (2001) 2 SCC 62.

In India, the Court has started calculating environmental damages keeping in mind the factors such as the deterrent nature of the award. In *M.C. Mehta* v. *Kamal Nath*,[174] the Span Motels Pvt. Ltd. was causing widespread pollution by various construction activities on the banks of River Beas (Himachal Pradesh) and by discharging untreated effluents into the river. The Court observed:

> The various laws in force to prevent, control pollution and protect environment and ecology provide for different categories of punishment in the nature of imposition of fine as well as imprisonment or either of them, depending upon the nature and extent of violation... Keeping in view all these and the very object underlying the imposition of imprisonment and fine under the relevant laws to be not only punish the individual concerned but also to serve as a deterrent to others to desist from indulging in such wrongs which we consider to be almost similar to the purpose and aim of awarding exemplary damages, it would be both in public interest as well as in the interests of justice to fix the quantum of exemplary damages payable by Span Motels Pvt. Ltd. at Rupees Ten lakhs only. This amount we are fixing keeping in view the undertaking given by them to bear a fair share of the project cost of ecological restoration which would be quite separate and apart from their liability for the exemplary damages.

Therefore, the statutory liability models available in India create a deterrence on persons / industries involved in causing pollution by hazardous substances. The emphasis has been on criminal liability with penal and deterring sanctions. However, keeping in view the fact that in a developing country like India the setting up of hazardous industries is unavoidable for the economic development of the nation, the appropriateness of this deterrent liability approach can be easily questioned. Industrialists will hesitate in establishing such industries which in turn may seriously jeopardise the economic progress. Moreover, the basic ingredient of criminal liability is the proof of *mens rea* or the guilty state

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174. AIR 2002 SC 1515.

of mind. The words such as knowingly, maliciously, wilfully etc. used in different statutes denote *mens rea*. This is very difficult to prove in hazardous substance litigation. The causal connection is extremely difficult to prove. In this scenario, any legal regime concerning hazardous substances needs to primarily focus on preventive approach to ensure sustainable development. The sanctioning mechanisms ought to primarily aim at preventing the harm. Industries may be exhorted to adopt safety measures and continuous monitoring of such measures is necessary. The environmental impact assessment procedure may be incorporated as a mandatory requirement. Deterrence is, of course, necessary but preventive approach is equally important.

Besides the above stated liability regime in India under the general and special central enactments, the Indian legislature has also enacted two special statutes, namely, the Public Liability Insurance Act, 1991 and the National Environment Tribunal Act, 1995 with the sole object of effective and expeditious disposal of cases arising out of accidents involving 'hazardous substances'. Both the Acts establish strict liability regime in case of death, injury or damage caused due to accidents occurring while handling hazardous substances. A brief discussion of the salient features of these two enactments vis-a-vis judicial response is necessary to determine how far the provisions contained therein are capable of meeting the challenges arising out of hazardous substances.

7.6.1 *The Public Liability Insurance Act, 1991*

The Public Liability Insurance Act[175] (hereinafter to be referred to as 'PLIA') was enacted on 22nd January, 1991. The object of the Act is to ensure

175. Act No. 6 of 1991.

immediate relief to the persons affected by accidents[176] involving handling[177] of any 'hazardous substance'.[178] Where an accident results in death or injury to any person or damage to property, the owner[179] is liable to give such relief as is specified in the Schedule of the Act. The claimant is not required to prove wrongful act, neglect or default of any person.[180]

Every owner handling any hazardous substance is required to take out one or more insurance policies to cover such situations. The policies are to be renewed from time to time till the handling of hazardous substances continues. Besides this, the owner should pay to the insurer an amount, not exceeding the sum equivalent to the amount of premium, to be credited to the Environmental Relief Fund established under the Act. In case the owner is Central or State Government, any corporation owned or controlled by them, or any local authority, they may be exempted from taking such insurance policies provided a fund has been established and is being maintained by them.[181]

The procedure of preferring claims for relief has been laid down in the Act. The Collector under whose jurisdiction an accident occurs, should verify the

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176. "Accident" means an accident involving a fortuitous, or sudden or unintended occurrence while handling any hazardous substance resulting in continuous or intermittent or repeated exposure to death of, or injury to, any person or damage to any property but does not include an accident by reason only of war or radio-activity. [Section 2(a)]
177. "Handling", in relation to any hazardous substance, means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance. [Section 2(c)].
178. "Hazardous substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986, and exceeding such quantity as may be specified, by notification, by the Central Government [Section 2(d)].
179. "Owner" means a person who owns or has control over handling any hazardous substance. [*See* Section 2(g)].
180. Section 3.
181. Section 4.

occurrence and invite applications for claim for relief.[182] The application has to be made in the prescribed form accompanied with prescribed documents and within five years of the occurrence. The application may be made by the injured person, owner of damaged property and in case of death, by all or any of the legal representatives of the deceased.[183]

On receipt of an application, the Collector holds an inquiry and after giving the parties an opportunity of being heard may make an award determining the amount of relief. to be deposited by the owner within thirty days. For the disposal of application for claim for relief, the Collector may adopt summary procedure and shall act as a Civil Court. Where the insurer or the owner fails to comply with the terms of the award, the amount is recoverable from them as arrears of land revenue or of public demand. The Act desires that a claim for relief in respect of death or injury should be disposed of within three months.[184]

PLIA was amended in 1992 by Public Liability Insurance (Amendment) Act.[185] A provision for the establishment of Environmental Relief Fund was incorporated.[186] The Fund should be utilised as per the scheme specified by the Central Government.

In case of death or injury, the right to claim compensation under some other law is available but the amount of such compensation shall be reduced by the amount of relief paid under the Act.[187]

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182. Section 5.
183. Section 6.
184. Section 7.
185. Act No. 11 of 1992.
186. Section 7A.
187. Section 8.

Any person authorised by the Central Government may require any owner to furnish necessary information. He has a right to enter and search any place, premises or vehicle and may seize any hazardous substance, the handling of which amounts to contravention of the provisions of the Act. In order to prevent an accident, he may dispose of any hazardous substance and recover the cost of disposal from the owner.[188]

In exercise of its powers and performance of its functions under the Act, the Central Government may issue directions to any owner, person, officer, authority or agency, including directions to prohibit or regulate the handling of any hazardous substance or to stop or regulate the supply of electricity, water or any other service.[189]

In case of contravention of any of the provisions of the Act, the Central Government or any person authorised by it, may make an application to a Court of Metropolitan Magistrate or a Judicial Magistrate of the first class for restraining the owner. The Court may make such order as it deems fit and the cost of implementation of any direction issued by the Court shall be recoverable from the owner as arrears of land revenue or of public demand.[190]

For violation of Sections 4 and 12, a mandatory minimum punishment has been provided. The penalty is imprisonment for a term which shall not be less than one year and six months but which may extend to six years or fine which shall not be less than one lakh rupees or both. In case the offence is repeated, the punishment will be imprisonment for a term which shall not be less than two

188. Sections 9-11.
189. Section 12.
190. Section 13.

years but which may extend to seven years and fine which shall not be less than one lakh rupees.[191]

If an owner fails to furnish information as required or does not render all assistance to the person authorised by the Central Government in the performance of his duties, he shall be punished with imprisonment which may extend to three months or with fine which may extend to ten thousand rupees, or with both.[192]

There are provisions under the Act laying down the penal liability of corporations[193] and the Head of Government Departments[194] with the usual exemption in favour of a person proving lack of knowledge or exercising all due diligence to prevent the commission of offence.

The Court can not take cognizance of any offence under the Act except on a complaint made by the Central Government or its authorised officer or any person who has given notice of not less than sixty days to the Central Government of his intention to make a complaint.[195]

The Central Government can delegate its powers and functions under the Act except the power to make rules.[196] No suit or prosecution can lie against the Government or its authorised officer or agency for anything done in good faith.[197] The Act authorises the Central Government to constitute an Advisory

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191. Section 14.
192. Section 15.
193. Section 16.
194. Section 17.
195. Section 18.
196. Section 19. Section 23 empowers the Central Government to make rules. The Government has issued Public Liability Insurance Rules, 1991.
197. Section 20.

Committee to advise on matters relating to insurance policies, consisting of representatives of the Central Government, owners, insurers and experts of insurance or hazardous substances.[198]

PLIA is till date the most important legislation on the subject of claims for accidents due to hazardous substances and is likely to be of great significance for business and industry in the years to come. It was enacted to provide for public liability insurance for providing immediate relief to the persons affected by accidents due to hazardous substances. The word 'insurance' in the title of the Act is not to be construed in the narrow sense of insurance by insurance companies; it includes the concept of liability without fault (strict liability). Section 3(2) of the Act places strict liability in cases of accidents due to 'hazardous substances', and it is not necessary for the claimant to plead that the death or injury was caused by a wrong or negligent act of any person. Section 4, which requires owners who handle hazardous substances to take out insurance policies, is for the protection of the owners, and it can not be said that if no insurance policy is taken out the owner will escape liability.[199]

The advent of the industrial revolution, while conferring many benefits on mankind has also led to certain hazards which were not faced by the people living earlier e.g., the hazards of industrial accidents, pollution etc. Although many statutes were enacted in India for protection of workers in industries e.g. the Workmen's Compensation Act, 1923, Employee's State Insurance Act, 1948, etc. the remedy available to other members of the public for accidents

198. Section 21.
199. *U.P. State Electricity Board* v. *District Magistrate, Dehradun*, AIR 1998 Allahabad 1.

due to hazardous substances was only to file a civil suit for damages, which apart from involving heavy expenditure in the form of Court fees, etc. takes years to decide. Realising this difficulty of the general public, the PLIA was enacted by Parliament for giving compensation to the persons (or their legal representatives) who suffer in accidents caused by hazardous substance. In India, while rapid industrialisation is absolutely essential for modernisation of the country, we need to avoid the evils caused by unplanned industrialisation e.g. air and water pollution, discharge of harmful chemicals, explosion etc. In the event of an industrial accident, prompt compensation must be paid to the victims. The 1991 Act is a significant step forward towards securing social justice to such victims.[200]

In *U.P. State Electricity Board's case*,[201] the question before Allahabad High Court was whether electricity is a hazardous substance and the petitioners (parents and legal representatives of the deceased) can claim award of compensation under PLIA for the death of their son due to electric shock after coming into contact with a high tension wire which was hanging at a low height. M. Katju, J. held :

> ...There can hardly be any doubt that electricity is 'hazardous' since it can injure or even kill people if not properly handled. Hence, the main question is whether electricity is a 'substance'... In my opinion, electricity is clearly a substance, since electrons, which constitute electricity, are material particles having specific physico-chemical properties... Since electricity is both hazardous as well as a substance, in my opinion, it is clearly a 'hazardous substance'.

200. *Ibid.*
201. *Ibid.*

As regards the contention that since electricity is not mentioned in the notification of the Central Government issued under Section 2(d) of the 1991 Act, it does not come within the definition of 'hazardous substances' under the 1991 Act, Katju, J. observed:

> ...The 1991 Act is a beneficial legislation for a social objective and hence it should be given a liberal interpretation, and if two views are possible, the view in favour of the public should be preferred. According to the settled principles of interpretation, welfare or social legislation should be given a liberal and not a strict construction... Hence in my opinion 'hazardous substance' as defined in Section 2(d) of the 1991 Act is not to be confined to a substance specified in the notification issued by the Central Government, but it includes all substances which come under the definition of 'hazardous substance' under the Environment (Protection) Act, 1986....

The Court, therefore, held that since the deceased was a bachelor, the claimants, being his parents, are his heirs and hence their claim for the award of compensation is maintainable.

In *M.P. State Electricity Board, Jabalpur* v. *Collector, Mandla*,[202] the husband of the claimant / respondent died due to electrocution when he came into contact with the electric wire. The Collector awarded a compensation of Rs. 25000 to her holding that the electricity was a hazardous substance as per PLIA.

The Electricity Board filed a writ petition in the M.P. High Court against the order of the Collector contending that the electricity is not a hazardous substance as the same has not been notified as such by the Central Government under Section 2(d) of the PLIA. The Court while relying on the decision of Allahabad High Court in *U.P. State Electricity Board's case*,[203] held that when

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202. AIR 2003 Madhya Pradesh 156.
203. *supra* note 199.

something is hazardous irrespective of quantity, it is not necessary for the Central Government to issue a notification. A thing which is known as intensely hazardous has to be treated as hazardous substance so as to effectuate the purposes for the enactment of the Act of 1991. Some article may not be hazardous in small quantity but electricity is not one of such article Only those hazardous substances have to be notified which may be dangerous on exceeding a particular quantity and then it becomes necessary to specify the quantity. Since electricity, in any quantity, is hazardous, notification is not necessary and it has to be taken as hazardous substance within the meaning of Section 2(d) of the Act of 1991. Section 2(d) of the Act of 1991 does not have the effect of narrowing down the meaning of 'hazardous substance' as defined in Section 2(e) of the EPA The Court further held ·

> Section 3(2) of the Act of 1991 speaks about the strict liability without fault in case of such accidents involving death due to hazardous substance and it is not necessary for the claimant to plead and establish that the death, injury or damage in respect of which the claim has been made was due to any wrongful act, neglect or default of any person. No policy was taken out by the Board That will not affect the liability of the owner The main aims and objects of the Board are to generate, transform and transmit the electricity and these are its activities It can not escape from its liability by saying that no policy was taken by the Board [204]

Therefore, the rapid growth of hazardous industries, operations and processes in India with inherent risk of accidents led to the enactment of PLIA The object of the Act is to provide immediate relief to the victims of such accidents The owner of an installation handling hazardous substances has to compulsorily take out insurance policies to cover his liability under the Act which is strict 'Environmental Relief Fund' has been created to supplement the insurance

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204. *supra* note 202, at 161.

coverage. Non-compliance with the provisions of the Act may also result in penal consequences with mandatory minimum imprisonment and fine. However, after going through the provisions of PLIA, two questions necessarily arise, namely:

1. What is the relationship between this enactment and National Environment Tribunal Act, 1995 (NETA),[205] which has a concurrent jurisdiction over the subject matter? Although it appears that a claim preferred under NETA will override the one made before the District Collector.
2. What is the actual operational ambit of Environmental Relief Fund? It appears that the purpose of relief is reimbursement of loss caused to person or property. Whether the money available under the Fund can be utilised for restoring the damage caused to the environment as a result of mishandling of hazardous substance?

It would be better if a clarification is issued on the above mentioned aspects.

7.6.2 *National Environment Tribunal Act, 1995*

> ...There are important differences between the quest for truth in the Court room and the quest for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly.[206]

National Environment Tribunal Act[207] (hereinafter to be referred to as NETA) came into force on 17th June, 1995. The object of the enactment as set out in the preamble is to provide for strict liability for damages arising out of any

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205. *Infra* at 473.
206. *Dubert* v. *Merrel Dow Pharmaceuticals Inc* (1993) 113 SCt 2786, *quoted in A.P. Pollution Control Board's case*, *supra* note 29, at 731.
207. Act No. 27 of 1995.

accident occurring while handling any hazardous substance[208] and to establish a National Environment Tribunal for effective and expeditious disposal of such cases, with a view to give relief and compensation for damages to persons, property and environment.

The need for the establishment of Environment Court was emphasised by the Supreme Court as early as in 1986 in *Shri Ram Mills case.*[209] While deciding this case, the Court was confronted with highly scientific and technical issues Although it delivered a bold and innovative judgment giving relief to the victims of oleum gas leakage but noticed that to decide a case based on environmental pollution and ecological destruction is a 'difficult and by its very nature, unsatisfactory exercise'. The Court held :

> We would in the circumstances urge upon the Government of India to set up an Ecological Sciences Research Group consisting of independent, professionally competent experts in different branches of science and technology, who would act as an information bank for the Court and the government departments... We would also suggest to the Government of India that since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up Environment Courts on the regional basis with one professional Judge and two experts drawn from the Ecological Sciences Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would of course be a right of appeal to this Court from the decision of the Environment Court.

In *Indian Council for Enviro-Legal Action* v. *Union of India,*[210] the apex Court held :

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208. "Hazardous substance" means any substance or preparation which is defined as hazardous substance in the EPA, 1986, and exceeding such quantity as specified by the Central Government under the PLIA, 1991. [Section 2(f)].
209. *supra* note 1.
210. *supra* note 9.

> The suggestion for establishment of environment courts is a commendable one. The experience shows that the prosecutions launched in ordinary criminal courts under the provisions of the Water Act, Air Act and Environment Act never reach their conclusion either because of the workload in those courts or because there is no proper appreciation of the significance of the environment matters on the part of those in charge of conducting of those cases. Moreover, any orders passed by the authorities under Water and Air Acts and the Environment Act are immediately questioned by the industries in courts. Those proceedings take years and years to reach conclusion. Very often, interim orders are granted meanwhile which effectively disable the authorities from ensuring the implementation of their orders. All this points to the need for creating environment courts which alone should be empowered to deal with all matters, civil and criminal, relating to environment. These courts should be manned by legally trained persons / judicial officers and should be allowed to adopt summary procedures. This issue, no doubt, requires to be studied and examined in depth from all angles before taking any action.

Inspired by the recommendations of the Supreme Court, NETA was enacted by Parliament under Article 253 of the Constitution to give effect to the decisions taken at the United Nations Conference on Environment and Development held at Rio de Janeiro in June, 1992 in which India participated, calling upon the states to develop national laws regarding liability and compensation for the victims of pollution and other environmental damages.[211] It was considered expedient to implement the decisions of the Conference so far as they relate to the protection of environment and payment of compensation for damage to persons, property and the environment while handling hazardous substances.

Where death or injury to any person or damage to any property has resulted from an accident, the owner is liable to pay compensation as per the heads specified in the Schedule, without the proof of wrongful act, neglect or default

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211. *See* Principle 13 of the Rio Declaration. As regards hazardous materials and activities, the relevant part of Principle 10 of the Declaration may also be quoted which reads - "....At the national level,... effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".

of any person. Where damage is the combined effect of several activities, the liability is apportioned on an equitable basis.[212]

An application for claim for compensation containing prescribed particulars, documents and fee[213] may be made to the Tribunal within five years of the occurrence, by the person injured; owner of damaged property; in case of death by the legal representatives; agent duly authorised; any representative body or organisation; or the Central Government, State Government or a local authority. If the relief has already been received or an application is pending before the Collector under the provisions of the PLIA, no application can be made to the Tribunal.[214]

The Tribunal may, after inquiry, either reject the application or after giving the parties an opportunity of being heard, make an award determining the amount of compensation to be paid. Although the Tribunal has the same powers as are vested in a Civil Court but is not bound by the procedure laid down under the Code of Civil Procedure, 1908 and should only be guided by the principles of natural justice.[215] The Act requires that on an application, interim orders (injunction or stay) should not be made except in cases where money can not be adequate relief. Any interim order, if not vacated earlier, ceases to have effect on the expiry of a period of fourteen days.[216]

The amount of compensation payable under the Act shall be reduced by the amount of relief or compensation paid under any other law.[217]

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212. Section 3.
213. Not exceeding one thousand rupees.
214. Section 4.
215. Section 5.
216. Section 6.
217. Section 7.

Where compensation is awarded by the Tribunal on the ground of any damage to environment, the amount shall be credited to the Environmental Relief Fund established under Section 7A of the PLIA.[218] The award of the Tribunal is executable as a decree of a Civil Court and the Collector executes the award. If an owner fails to comply, the amount is recovered as arrears of land revenue or of public demand.[219] An appeal shall lie only to the Supreme Court, within a period of ninety days, against the award or order of the Tribunal.[220]

Whoever fails to comply with the order of the Tribunal, shall be punished with imprisonment for a term which may extend to three years, or with fine which may extend to ten lakh rupees, or with both.[221]

There is corporate responsibility with the usual exemption in favour of a person proving lack of knowledge or exercising all due diligence to prevent the commission of such offence.[222]

The proceedings before the Tribunal are judicial proceedings within the meaning of Sections 193, 219 and 228 of the Indian Penal Code, 1860[223] and office bearers are deemed to be public servants within the meaning of Section 21 of that Code.[224] No suit, prosecution or other legal proceeding can lie against them for anything done in good faith.[225]

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218. Section 22.
219. Section 23.
220. Section 24.
221. Section 25.
222. Section 26.
223. Section 27.
224. Section 28.
225. Section 29.

The Central Government has been empowered to make rules for carrying out the purposes of the Act but every rule so made is to be laid before each House of Parliament for approval.[226]

However, the scope of NETA is restricted to giving relief and compensation 'for damages arising out of any accident occurring while handling any hazardous substance'. This falls substantially short of the recommendations of the Supreme Court to set up Environment Courts to deal with the increasing number of cases 'involving issues of environmental pollution, ecological destruction and conflicts over natural resources' and 'to deal with all matters, civil and criminal, relating to environment'. There is a need for 'a multi-faceted, multi-skilled body which would combine the services provided by existing courts, tribunals and inspectors in the environmental field. It should be a 'one-stop shop', which should lead to faster, cheaper and the more effective resolution of disputes in the environmental area. It would avoid increasing the load on already overburdened lay institutions by trying to compel them to resolve issues with which they are not designed to deal.[227]

The Act provides strict liability in case of death or injury to any person (other than a workman) resulting from an accident. It is hard to understand why 'workmen' have been excluded although they will be the first victims of an accident being present on the spot. Their cases are to be governed by the provisions of Workmen's Compensation Act, 1923. It is quite possible that claimants under NETA may get better monetary compensation than the

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226. Section 31.
227. Lord Woolf, *Are the Judiciary Environmentally Myopic?*, *see* 4 J. Envtl. Law, No. 1, 1 (1992), *quoted in A.P. Pollution Control Board's case, supra* note 29, at 730.

workmen directly involved. Moreover, the strict liability regime established under NETA is made inapplicable to corporate offences.

The Officials of the Tribunal are to be appointed from amongst the members of higher judiciary or central or state bureaucracy. It means that only retiring or retired Judges and officers of Indian Administrative Service may be appointed. There is no provision for recruitment of members from the Bar, academic institutions or from amongst the activists working in the field of environment. Moreover, as pointed out by the apex Court:

> ... The Tribunal under the National Environment Tribunal Act, 1995, which has power to award compensation for death or injury to any person (other than workmen), under Section 10 consists of a Chairman who could be a Judge or retired Judge of the Supreme Court or High Court and a technical member. But Section 10(1)(b) read with Section 10(2)(b) or (c) permits a Secretary to the Government or the Additional Secretary who has been a Vice-Chairman for two years to be appointed as the Chairman. These are instances of grave inadequacies.[228]

The Court further pointed out :

> The Land and Environment Court of New South Wales in Australia, established in 1980, could be the ideal. It is a superior court of record and is composed of four Judges and nine technical and conciliation assessors. Its jurisdiction combines appeal, judicial review and enforcement functions. Such a composition in our opinion is necessary and ideal in environmental matters.[229]

In *A.P. Pollution Control Board II* v. *Prof. M.V. Nayudu (Retd.)*,[230] the Court observed:

> Inasmuch as most of the statutes dealing with environment are by Parliament, we would think that the Law Commission could

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228. *A.P. Pollution Control Board's case*, *supra* note 29, at 722.
229. *Id.* at 736.
230. *supra* note 173, at 85.

> kindly consider the question of review of the environmental laws and the need for constitution of Environmental Courts with experts in environmental law, in addition to judicial members, in the light of experience in other countries.

NETA does not contain any provision as to whether actions or claims already initiated in various courts of the country, can be transferred to the Tribunal. It also does not preclude public interest litigation launched under the writ jurisdiction of the High Courts and the Supreme Court. It means that the Indian judiciary, already burdened with heavy case load, has to still perform a 'difficult and by its very nature, unsatisfactory exercise'. Specialised judicial structure with the sole task of enforcing environmental laws in the country is still lacking even after the enactment of NETA.

7.7 Conclusion

In this chapter, we have reviewed the liability and compensation regime specially developed to meet the problems arising out of hazardous substances. The regime incorporates both 'preventive' and 'command and control' mechanisms. Still, large volumes of hazardous wastes are produced and vast majority of hazardous chemicals are being manufactured. The hazardous chemicals are being marketed without adequate evaluation of the hazards they pose. These substances, as pointed out, cause serious and irreversible degradation of the environment and harm to present and future generations. In this scenario, there is a need to strengthen the current network of liability and compensation and to provide for a comprehensive regime in such cases. This will inevitably include some of the best mechanisms evolved under different systems of law to meet the challenges posed by hazardous substances and processes. Specifically, the following suggestions may be offered:

1. The principle of absolute liability ought to be incorporated. The boundaries of traditional tort law may be relaxed in such cases so that tortuous liability can really become an effective supplement to current environmental regulation. Existing uncertainties arising due to the preponderance of evidence may be resolved in public's favour.

2. There is a need to set up mechanisms to induce compliance with relevant international instruments and to regulate the consequences of their breach. In case, these instruments are not yet in force due to ratification problem, the required number of states should, on priority basis, ratify such instruments so as to bring them in force at an early date. Efforts need to be strengthened to encourage countries to ratify these instruments. The process of ratification be expedited by understanding the reasons of delay. The relevant international agreements already in force may be amended to specifically address the questions of liability.

3. The precautionary approach suits better as a guiding force behind decision making process. This may be overprotective in the interests of avoiding harm. The principle of reversal of burden of proof may be followed in case of an inherently and potentially hazardous activity.

4. In case precautionary approach fails, the polluter-pays principle may be applied to ensure restoration of the damaged environment and compensation to the victims. An ideal liability and compensation regime links itself with economic instruments, such as mandatory insurance coverage or the creation of funds, in order to effectively implement the polluter-pays principle.

5. The concept of 'duty of care' may be given statutory recognition. The evidence relating to breach of this duty in respect of hazardous substances may be made admissible in civil and criminal legal proceedings. This statutory duty should be distinct from ordinary duty of care in negligence cases, the breach of which must entail civil and penal consequences.

6. The administrative set up established under statutes needs strengthening to ensure that permitted hazardous activities are carried out only with proper authorisation. Regular monitoring by the responsible authorities is necessary to ensure compliance with the terms and conditions of authorisation. These authorities may be vested with power to impose administrative penalties against violators. Any laxity on the part of administrative authorities must entail consequences. Moreover, the authorities must be entrusted with the task of immediate remediation / rehabilitation work with a provision to subsequently recover costs from the polluter. For this, environmental funds must be established / created like 'Superfund' under the U.S. law.

7. For effective regulation and comprehensive control of hazardous substances, the 'cradle-to-grave' approach needs to be incorporated. The producers and manufacturers may be exhorted to accept this approach while designing their products.

8. Citizens may be empowered to initiate action against administrative / enforcement authorities who fail to perform their statutory duties as well as against those who violate legal provisions. The fundamental

principle of responsibility and accountability needs to be firmly established

9. A system may be developed to identify potentially responsible parties causing pollution in order to fix responsibilities

10. Special environmental courts may be established to deal with highly scientific and technical issues. This will ensure effective and expeditious disposal of environmental cases and reduce the burden of already overburdened ordinary courts. Special courts are needed because ordinary courts are ill-equipped to handle such cases

11. Last but not the least, the provisions relating to exemplary punishments and fines ought to be retained In view of the extent of potential damage that hazardous substances may cause, the deterrent theory of criminal justice administration can deliver goods in such cases also

Chapter – 8

Conclusion & Suggestions

8 1 This research thesis brings on the surface the inherent contradiction and clash of interest between sustainability and development This conflict has affected the viability of laws and administrative measures aimed at regulating hazardous wastes and toxic chemicals As we have seen, the problem is enormous since India generates around 4 5 million tons of hazardous wastes The number of hazardous chemicals used is similarly gigantic The normative framework is equally complex The legislative response has followed the pattern of developed countries seeking to create a system of decentralised administration through an elaborate administrative set up brought into existence by subordinate legislation But the main problem is that of implementation The key problem is related to the need of conciliation between the system created by law and the needs of a populous society The values and standards followed by the legislation and the rules reflect the concerns of scientific community The standards are drawn from the developed countries They reflect the views of knowledgeables The expert community dictates the standards with little realisation of ground realities This creates the problem as India has one of the most sophisticated system for pollution management but it does little Implementation of the system leaves much to be desired

8 2 We began the study with the hypothesis that compliance is likely to be undermined by discretionary acts of the administrators This has been

fully proved by our studies of the norms of environmental law and its administration in India.

8.3 Chapter-II has broadly reviewed the development of international norms for regulation of hazardous substances, both hazardous wastes and toxic chemicals. The development of the conventions, like the Basel Convention, has a lot of utility and a few conventions are being currently developed like the POPs Convention which seeks to regulate persistent organic pollutants. This chapter assessed the international (with special emphasis on U.K. & U.S.) efforts in the management and control of hazardous wastes in the first section. These efforts indicate that the primary focus of the legal regimes is on the minimisation of the generation or production of hazardous wastes (principle of waste minimisation). This includes the techniques like recycling and re-use and development of clean technologies. However, in view of high levels of production and consumption, the generation of some waste is inevitable. This waste generated has to be disposed of safely so that it does not cause any damage to human health and environment. However, waste disposal, either through landfilling, incineration, composting, dumping in sea or other water sources or by sending / transporting waste to some other destination, is seen / ranked as the last option in any waste management policy in view of the harmful effects of these activities on human health and environment including depletion of scarce natural resources.

8.4 Chapter-II dealt with the issues of dumping at sea and transboundary movements of hazardous wastes also. International law appears to be

basically concerned with these issues as is evident from international legal instruments in this regard. The above stated activities are not outrightly banned but regulated in the interest of economic development. It may be noted that certain regional conventions have banned the import of hazardous wastes into their territory by any State outside their region but have allowed the movement of waste among themselves.

8.5 As regards toxic chemicals, international law emphasises upon intensive work and coordination among relevant agencies created at the international level and national governments. The issue of proper management and handling of hazardous chemicals is largely regarded as the domain of national governments that are expected to act as per international guidelines in this regard. Since chemical risks do not respect national boarders, the assessment and management of these risks need to occur at the national level from where these risks emanate.

8.6 International law does not provide adequate remedies and the indigenous system of under developed countries like India fail to cope with the demands of international regime. Even in respect of the basic Basel Convention it has been found very difficult by India to return the waste, illegally imported, to the country of its origin particularly because there are sectarian economic interests which hope to gain from such imports and which make strategic use of the lethargy of the system where it takes almost 16 months to conduct the basic test to determine whether the imported substance is hazardous. The story of many waste oil imports to India reveals that the system has failed to understand the need for vigil and alacrity.

8.7 The Supreme Court and to some extent the High Courts have sought to remedy the gap in the administration of environmental law by constitutionalising the problem of environment. In chapter-III, we have examined the three techniques which have been used by the Supreme Court to bring the problem of environment to centre stage of constitutional adjudication. The Supreme Court has made it possible to bring the environmental problems for the determination by higher courts by generating a new fundamental right to wholesome environment. Purist may argue that the Court has violated the text of the Constitution. But textualism has been rescinded 25 years ago, and the Court has thereby undertaken for itself the job of rewriting the Constitution to meet the needs of the society. This achievement is the highest evidence of social engineering on the part of the Court. Of course, there are weaknesses in this endeavour. The efforts of the Court are still inadequate though it has arrived at a very laudable conclusion. The line of reasoning for the same is yet to be adequately worked out. This inadequacy, if not handled effectively, is likely to hamper the future growth of the concept of fundamental right to wholesome environment.

8.8 A parallel development has been the process of collapsing the Directive Principles of State Policy into Fundamental Rights. Here too, the Court has moved beyond textualism but has not reasoned enough. Situations may arise where, on the analogy of environment, other Directive Principles may be brought before the Court for being translated into Fundamental Rights causing serious logical difficulties. Not all Directive

Principles can easily be accommodated as Fundamental Rights like, for example, the directive principle for a uniform civil code. We cannot imagine easily the Supreme Court mandating the legislature to undertake such exercise. The Court will have to develop criteria to classify directives in such a manner that some of them become eligible for translation into Fundamental Rights while others do not.

8.9 A third contribution of the judiciary has been to provide a much needed value referent for environmental law. The basic difficulty with environmental legislation has been the absence of certain basic values with reference to which the administration and implementation of environmental legislation may be supervised. The scientific orientation of environmental legislation has left no room for incorporating claims of development in implementation of the principles of law. The Supreme Court has adopted and categorically declared sustainable development as the basic value thereby making it possible that every act of regulation to be assessed for its contribution to sustainability of wholesome environment and also to the developmental objectives of the country. A balancing can then take place to determine whether invocation of environmental norms is feasible or not in terms of development. The Court has thus provided the most valuable component to environmental law.

8.10 Chapter-IV dealt with the specific legal regime pertaining to hazardous substances in India. The rules framed and notifications issued under the enabling provisions of the EPA (the general environmental statute in India), are of far reaching significance. EPA contains specific provisions

regarding management and handling of hazardous substances including procedures and safeguards to be complied with in this regard. EPA empowers the Central Government to make rules for the effective implementation of provisions. In exercise of these powers, the Central Government has framed rules regarding proper control and management of hazardous wastes, municipal solid wastes and hazardous chemicals. Besides, the Central Government has also issued various notifications addressing the issues relating to hazardous substances. Thus, the manufacture, storage, use, transport, import or export of these substances have been extensively regulated in India. The notifications requiring Environmental Impact Assessment are important in view of the growing number of hazardous industries and projects. Environmental Impact Assessment is an important means of implementing 'precautionary principle' which has assumed significance in hazardous substance jurisprudence. Therefore, various legislative and administrative measures have been resorted to in India to protect human health and the environment from the threats posed by hazardous substances. These efforts have received overwhelming support by the Indian judiciary. In case after case, it has been brought to the notice of the higher courts that inspite of definite mandate, the administrative authorities have failed to take appropriate action. In order to meet such non-action by the administrative authorities, the Supreme Court has devised a new jurisprudence of detailed directions requiring the administrative authorities to perform their function in the judicially determined manner thereby virtually supplanting administrative

discretion by judicial determination as the principal mechanism of enforcement. However, the basic cause of concern in India is the lackadaisical attitude of the enforcement agencies. There is a need to make these agencies more responsive so that the laws can be enforced in letter and spirit. The Court has taken a few steps but what is needed is continuous monitoring.

8.11 Chapter-V dealt with special central enactments in India relating to hazardous substances. A detailed review of the salient features of these laws and the judicial response has been presented. The review reveals that different hazardous activities, though permitted, have been extensively regulated in India. The persons or organisations in charge of such activities involving hazardous substances and processes are required to ensure that regulatory provisions are complied with and no damage occurs to human health or the environment. The courts have insisted on frequent administrative reviews to update the controls. Judicial pronouncements fixing liability on the wrongdoer indicate the application of deterrent theory of punishment in environmental wrongs. The courts have awarded exemplary damages and ordered recovery of costs of ecological restoration / rehabilitation from the wrongdoer. This highlights the judicial concern to protect and improve the environment. The Indian judiciary has also tried to delicately balance the competing claims of environment and development by insisting on their co-existence.

8.12 Chapter-VI has focussed on general Indian laws having a direct or indirect bearing on the issue of hazardous substances. Our analysis

reveals that exhaustive measures have been devised to protect human, animal and plant life by operations and processes involving hazardous substances. The regime is comprehensive enough to cover gaseous, noxious, explosive, destructive, adulterated, misbranded, poisonous, inflammable and toxic substances. The regime regulates their manufacture, possession, use, storage, sale, distribution, transport, import and export through licensing, authorisation, registration, inspection, examination, laying down of standards, establishment of laboratories, inquiries, confiscation etc. It takes into account the welfare, health and safety of the workers and other persons involved in the use and handling of such substances. Special attention has been paid to the protection of the environment and prevention of pollution including disposal of wastes and effluents. The provisions under the Indian Penal Code and Code of Criminal Procedure can be effectively utilised to control the menace caused by hazardous activities by way of independent and speedy remedies in case of public nuisance. As regards development and regulation of mines and minerals, the rehabilitation aspect of degraded environment has been taken into account. These activities are regulated in offshore areas also and contravention of the provisions will invite civil and criminal liability. Deterrent punishment, including mandatory minimum sentence and fines, including heavy fines have been prescribed to ensure compliance of the provisions. The provisions, therefore, highlight the risks and dangers involved in the use and handling of hazardous substances and processes. These provisions try to regulate the connected activities through a system of command and control.

8.13 However, the regulatory regime does not reflect uniformity of practice for the proper control and management of hazardous substances. It appears to have emanated from different agencies with different philosophies, technological cultures and perceptions. It does not take into account the 'precautionary approach' which has assumed special significance in recent times for the control and management of these substances. Steps have not been devised to prevent entry of these substances in the environment. The provisions come into force only after the damage has been done. These shortcomings highlight the need to enact special legislative measures in India. There is a need of positive judicial response also in this connection to ensure that specific efforts are successful in addressing this critical issue.

8.14 The last Chapter i.e. Chapter-VII discussed the issues of liability and compensation in respect of hazardous substances. A review of liability and compensation regime vis-à-vis judicial attitude reveals that the regime incorporates both 'preventive' and 'command and control' measures to curb the menace caused by hazardous substances. The chapter suggests that the current network of liability and compensation has to be further strengthened. The key elements of an ideal model of liability and compensation have been proposed by drawing inferences from comparative analysis of different regimes.

8.15 The Indian legal regime pertaining to hazardous substances incorporates exhaustive measures to protect human health and environment from the ill effects of these substances. Although there are

statutes comprehensively covering gaseous, noxious, explosive, destructive, adulterated, misbranded, poisonous, inflammable and polluting substances, EPA along with its subordinate legislation still remains the basic legal instrument for hazardous substances in India. EPA appears to be the only statute in India which defines the expression 'hazardous substance' in an exhaustive manner.[1] It empowers the Central Government to lay down procedures and safeguards for the handling of such substances including the power to make rules in this regard. Besides, the legislations passed in India for the protection and safety of workers engaged in hazardous industries and processes, for example, the Factories Act, 1948 (as amended in 1987) are also of crucial significance.

8.16 However, despite efforts in this direction, the situation is far from satisfactory. Large volumes of hazardous waste and municipal solid waste are still generated and disposed of in a casual and unplanned manner. Host of hazardous chemicals are still being manufactured and marketed without adequate evaluation of their hazardous effects. An important reason for this state of affairs is the lack of a comprehensive legislation encompassing various aspects pertaining to hazardous substances. The existing laws are rather scattered and have piecemeal approach. As a result, there is lack of uniformity in practice. The

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1. *See* EPA, Section 2(e). The same definition was made applicable by the Indian legislature under PLIA, 1991 which was enacted to ensure immediate relief to the persons affected by accidents involving handling of any hazardous substance and also under NETA, 1995 which provides strict liability for damages arising out of any accident occurring while handling any hazardous substance.

enactment of a comprehensive and umbrella legislation on the subject is the urgent and pressing need of the hour.

8.17 We may conclude our discussion by offering certain suggestions for better management and handling of hazardous substances in future These suggestions are being proposed specially in Indian context This may be treated as a supplement to the suggestions already offered in the parent body of this work

8.2 Hazardous Waste

8 2 1 There are certain major areas of concern so far as hazardous waste management is concerned The problems in defining and characterising hazardous waste and shortage of reliable data are some of these These aspects need to be immediately looked into A classification system specifying the characteristics which make a waste product 'hazardous' may be adopted

8.2 2 Scientific methods be adopted for converting waste into useful organic manure, vermi-compost and biofertiliser without affecting health or environment Segregation of waste at source, efficient storing, timely transportation and proper methods of disposal need to be ensured

Industrial Hazardous Waste

8 2 3 The primary responsibility of treating and disposing the waste lies with industry that generates the waste Even reputed and multinational corporations have not given enough importance to hazardous waste management and disposal It is the high time that industry ought to

realise that if they do not treat and dispose of hazardous wastes properly, they are carrying out a criminal activity.

The basic cause of concern is the laxity being adopted by the authorities as well as industries in the proper disposal and management of industrial wastes. Industries have found a temporary solution of underground disposal of the wastes in a pit. This practice is dangerous as the chemicals pollute underground water. The authorities should ensure that the norms relating to proper disposal and management are strictly complied with and violating industries are punished with heavy penalties.

Industrial establishments should be exhorted to segregate the waste at source as wet compostable, dry recyclable and construction debris and to compost biodegradable waste, recycle the recyclable waste and landfill inorganic waste within their factory premises. In fact industry can play a crucial role in reducing the volume of waste because it can take action at the source itself e.g. during the design and manufacture of products. The principle of 'internalisation' should be adopted by industries in order to minimise waste in industrial processes to pursue the goal of 'zero waste, zero defect'. Improved product design, clean technologies and the use of less hazardous materials can significantly reduce the volumes of hazardous waste.

8.2.4 The tanneries in India generate large amounts of trimmings, shavings and fleshings per year. Anaerobic digestion may be used for generating methane from this organic waste. By digesting the organic waste in a closed system, the methane can be tapped and used for fuelling a power generator.

Recycling, Processing and Reuse

8.2.5 Re-use of treated trade effluent, tree plantation within and outside the premises, rain water harvesting facilities and non-use of plastic items are some of the measures which should be taken up by the industry. Packaging should be done in eco-friendly materials like paper, gunny bags, palm leaf mats, jute and cloth instead of plastic, thermocol and polyester.

8.2.6 There is a need for minimisation of waste and inculcation of technologically upgraded recycling. The underpaid sector involved in the process of recycling is unorganised and is using poor technologies thereby causing environmental hazards. The resultant recycled products are low cost and of poor quality, incapable of finding markets for consumption. Improvement in technologies and also in the socio-economic conditions of those involved in the recycling trade is necessary.

8.2.7 Reprocessing of hazardous wastes at unauthorised facilities in India results in the contamination of soil and air. The MoEF, therefore, registers actual users to prevent the detrimental effects of waste processing. Actual users should have facilities for environmentally sound management of hazardous wastes such as used oil, battery scrap, zinc scrap and other non-ferrous heavy metal scrap. They should have the consent and valid authorisation from the SPCB under the provisions of HW Rules. Unauthorised processing should attract the penal provisions of the EPA.

Illegal Trade

8.2.8 The dumping of toxic and hazardous wastes from industries in foreign countries raises concern of import of such substances reaching the

harbours of India Although mode of their disposal is under strict international norms and these can not be dumped in any country without going through strict procedural safeguards, most of these norms are flouted by the exporting firms abroad as well as the custom authorities and agencies. These dangerous substances are distributed to small units in several parts of the country which have no facilities either to analyse the contents of these substances or to handle them safely As a result, very often, they are carried on the heads by women as if they are ordinary goods This careless attitude in the handling of such substances should be stopped henceforth Certain ports may also be designated for the import of these unsafe chemicals and wastes As of now, there is no restriction on the harbours which receive the ships carrying such dangerous cargo By nominating the ports, stricter controls can be exercised Testing facilities can be installed in such ports and these substances should be allowed to leave the port premises only after clearance from the on-site laboratories Once the toxic and hazardous substances leave the ports for different destinations, it is difficult to trace their course State Governments should also be involved in the process

8 2 9 Off late, there is a sharp rise in the export of hazardous e-waste like computers by developed countries, specially the U S , to developing countries like India. In this industry, technology changes at quick pace As personal computers have become affordable, old models are simply discarded Since the developing countries have a market for such waste, they have become an easy dumping ground.

It is learnt that different types of waste like monitors, keyboards, circuit boards, cards, chips, processors, CDs and floppies follow different routes to enter Indian scrap markets The scrap dealers recycle this material to extract heavy metals such as copper and iron, precious metals such as gold and platinum and other material like plastic, lead and glass A single computer has around 3 8 pounds of lead The process of extraction is hazardous to both environment and human health The burning of circuit boards results in emission of hydrocarbons which are carcinogenic [2] These activities ought to be brought under control

8 2 10 There is a need to develop updated waste inventories Such inventories should ensure that the waste is properly tracked and managed Emphasis should be laid on the major sources of generation of hazardous waste A common site with hazardous waste treatment and disposal facility should be developed

8 2 11 Exchange programmes should be arranged with other countries to manage hazardous waste. There is a need for increasing technology transfer from developed countries

Bio-medical Waste

8 2 12 Hospitals with 200 beds or more should compulsorily have their own incinerators for safe disposal of medical wastes. Provision of waste treatment facility has been made mandatory for a 500 bed hospital

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2 Toufiq Rashid, *Not just scrap. Delhi gets its share of e-waste too*, Indian Express (New Delhi), dated 01 03 2002: CSE-India Green File, March 2002, No 171 at 91.

under BMW Rules, 1998 Municipal Corporations should also be entrusted with the task of constructing the plants with latest technology As part of the bio-medical waste disposal project, the corporations may introduce a tax system under which hospitals, clinics and nursing homes should pay some money towards the cost of collection, transportation and disposal of waste The doctors may willingly pay these charges for collection and disposal of wastes from their clinics and hospitals For example, Pune Municipal Corporation is earning a monthly revenue of Rs 2 5 lakh by charging cess from the hospitals for the service [3] The disposal plant, equipped with modern technology, may be used for generating energy also

8 2 13 The basic problem is the failure of hospitals to segregate bio-medical waste at source In many hospitals, waste is dumped in cardboard boxes in the corridors Rag-pickers walk in and collect these boxes to hand over the waste to factories recycling tons of syringes, catheters, needles and other products The illegal factories clean and repack these products in wrappings deceptively similar to the original ones These goods are then sold to wholesalers and chemists contributing to the high rates of infections including HIV This problem can be solved if hospitals themselves segregate their waste Hospital staff should be trained in waste management procedures and segregation Help of Non-Governmental Organisations (NGOs) may also be taken

8 2 14 Inappropriate segregation of waste at source, mixing of sharp objects with other recyclable waste, ambiguity in the final disposal of sharps

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3 *Bio-medical waste to bring in money for Pune civic body*, Indian Express (New Delhi) dated 7 5 2001 CSE-India Green File, May 2001, No 161 at 70

and plastics, disposables not being mutilated, inappropriate location of bins, biodegradable waste in deep burial not being covered properly with mud and untrained contractual waste handlers handling the waste are some of the problems associated with hospital waste management in India Mixing of infectious waste with non-infectious waste and thereby rendering the entire waste infectious and a health hazard, transportation of infected waste in open trucks, poor quality incinerators and lack of trained staff in most of the hospitals have further compounded the problem

8 2 15 In this scenario, it may be suggested that the monitoring and regulatory activities of the Pollution Control Boards should be effectively implemented, systems for safe management of BMW should be studied and incorporated into the workings of designated authorities under BMW Rules, waste management initiatives at the hospitals should be strengthened, the government should provide common facilities like collection and transport, incineration, sanitary landfill sites etc for all towns and cities and should also support private initiatives in this regard including recycling units Private companies may be asked to set up their incinerators and autoclaves on land owned by the government The hospitals and nursing homes can engage their services on payment basis The expertise of organisations like TERI may also be used Stern action should be taken against hospitals and nursing homes which fail to work according to norms provided under the rules. Surveys should be conducted to detect unregistered nursing homes and hospitals.

8.3 Municipal Waste

8.3.1 Waste management should be taken up in a decentralised manner instead of blaming the government for its inefficiency.

8.3.2 State Government should ensure installation of at least one incinerator for waste disposal in every city and town with a population of over five lakhs.

8.3.3 Municipal Corporations should ensure due collection of garbage and its transportation to landfill sites in close-bodied vehicles. Private entrepreneurs may also be involved in the process to ensure cleanliness and sanitation. Financial incentives may be given to entrepreneurs who offer their expertise in garbage disposal. Incentives should include subsidised land rates, subsidy on finished products and discount on equipment. There should be surprise checkings by flying squads and anti-corruption department on the working of the safai karamcharis, sanitary guides and inspectors.

8.3.4 The legislators, councilors, non-governmental organisations and welfare associations should be asked to contribute labour to keep at least their respective areas clean.

8.3.5 Sweeping during morning hours affects the health of school children and office-goers because the dust raised goes straight into their lungs. The municipal corporations should be asked to make a provision for night sweeping except on holidays as is done in several other countries of the world.

8.3.6 There should be proper insulation of landfill sites. Big establishments, like hotels and restaurants should be compelled to throw their garbage directly to the landfill site and not in their neighbourhood. 'Waste management' fee may be charged from individual households and commercial establishments.

8 3 7 Municipal Magistrates should be appointed having power to charge (challan) people for littering, dumping of garbage and defacement of public places Municipal Corporation of Delhi, for example, has decided to appoint 67 such Magistrates in the Capital who shall be retired civic body and Army officials It has also decided to enhance the penalty for the above stated wrongs from the existing Rs 50 to a whooping Rs 1000 The Corporation claims that this heavy penalty may act as a deterrent among citizens Surprise checks by Municipal Magistrates empowered to do spot challaning will deter people and result in the transformation of entire sanitation and cleanliness scenario in the Capital [4]

8 3 8 'Ragpickers' are a high-risk group prone to health hazards They are vulnerable to TB, respiratory problems, musculai-skeletal problems and skin diseases Medical insurance cover should be provided to them to ensure care in hospitals They, along with safai karamcharis of the municipality, should be given pollution masks, hand gloves and helmets to protect them from pollution

8 3 9 Waste management does not involve heavy expenditure in Indian context It is a low technology area The related technological expertise is available in the country What is needed is proper institution building and linkage between various agencies to manage waste Due to limited infrastructure, it is difficult for the municipalities alone to manage the waste NGOs and local people need to be involved in the process

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4 *MCD move for a clean Capital*, The Hindu (Delhi) dated 17 9 2001 CSE-India Green File, September 2001, No 165 at 74 75

8.3.10 The waste disposal system should involve the usage of hydroclaves, autoclaves, microwaves and incinerators to sanitise waste and recycle it.

8.3.11 There is a need for adopting an integrated approach that focuses on source reduction, due collection of household waste, recycling and reuse by making compost etc. Composting can provide natural fertilizer and composted manure can be sold at an affordable price to the farmers. This process shall generate gainful employment also. Composting converts nearly 60 percent of the garbage into compost and also decreases space requirements of a landfill. However, while fertilizers enjoy heavy subsidies, compost does not. There should be subsidies for setting up a compost plant and on the sale of compost so that at least the running cost of plant can be recovered. Composting is considered a cheaper and better solution for India. But there is need of Government subsidy and support for this activity.

8.3.12 India should adopt new technologies for conversion of waste into valuable materials. With the help of these technologies, municipal and hazardous waste may be converted into useful building materials, fuel and compost. These techniques shall prove to be economical as well as capable of converting the destruction of nature in construction work. Solid waste can be an alternate source of methane generation. The gas emitted from the waste actually goes untapped. It may be tapped and utilised by gas companies like Gas Authority of India Ltd. (GAIL) for domestic and commercial usage. Reports indicate a sharp rise in India in the demand of natural gas in future which is expected to reach 40 billion cubic metres by 2009-10.

8.3.13 At present, 70 percent of power in India is generated from coal. The rest comes from hydroelectric and nuclear plants. There are disadvantages with coal. Release of carbon dioxide, nitrogen oxide, particulates, sulphur dioxide and fly ash into the air and thereby polluting the environment are some of the many. Moreover, building a new coal fired power plant takes almost five years and requires substantial investment.

India, as the world's largest producer of sugar, has an attractive viable option in sugarcane. Crushed sugarcane, or bagasse, a waste product of the sugar industry, has the potential to provide five to ten percent of India's power needs. Advanced high pressure boilers may be deployed to ensure maximum power generation from bagasse. The Ministry of Non-Conventional Energy Sources (MNES) has already announced a national programme supporting bagasse-based power generation at some 220 Indian sugar mills, each crushing more than 2,500 tons of sugarcane per day and having the potential to generate between five to twenty megawatts of surplus power.[5] The surplus power may be supplied to the State Electricity Boards.

Among the non-conventional energy sources, biomass, wind, solar energy and industrial and municipal waste should be tapped for generating power to meet out the increasing demand of electricity in the country. Gasification technology may be used to dispose of solid waste

5. G.V. Joshi, *Electricity from sugarcane waste*, Newstime (Hyderabad) dated 2.9.2001: CSE-India Green File, September 2001, No. 165 at 105.

and also to produce electricity. Waste-to-energy (WTE) projects should be adopted.

8.3.14 Lavatories should be constructed in both rural and urban areas for people below the poverty line and at primary and upper primary schools in villages. In rural areas, if possible, urine-separating toilets should be constructed so that faecal matter may be stored for composting and urine can be directly used for agriculture.

8.3.15 Fruit and vegetable waste disposal plants should be established to treat and convert the waste into useful by-products.

8.3.16 While vegetarian organic waste may be used for compost manufacturing, meat waste can not be used for manure production. It is not possible to segregate it also. Meat waste is usually dumped in a landfill site causing foul smell and producing leachate which leaks from the landfill to ground water resulting in its contamination. The plants should be set up to convert this waste into tallow oil (an important ingredient in soaps manufacturing) chicken feed, and other products. The slaughter houses should be shifted to the outskirts of the city.

8.3.17 To spur community involvement, every household should be provided with different coloured litter boxes to ensure segregation of waste at source. Fully covered disposal vans should be introduced to avoid spillage. With the help of NGOs, workshops should be organised to teach the students about the importance of proper waste management.

8.3.18 Discharge of industrial and domestic sewage is causing heavy pollution of rivers, lakes, ponds and ground water. Clean up programmes like Ganga

Action Plan, Yamuna Action Plan or the National River Action Plan should be taken up to treat sewage. The aim should be to divert sewage to a treatment facility instead of directly flowing it into water streams.

8.3.19 Recycling of waste water should be the thrust area to overcome the problem of water starvation. Only recycled water should be used for agricultural and industrial purposes. This will prevent diversion of drinking water for these purposes.

Plastic Waste

8.3.20 Plastic waste management has not received sufficient attention in India. The country's per capita consumption of plastics which stood at around 0.6 kg. till 1985 is now 3.5 kg and this figure is expected to touch 6 kg by 2005-06.[6] While plastic products are extensively used in India in day-to-day life, their improper management in collection, segregation and disposal, notably of carry-bags and plastic pots, has become a growing problem. This waste chokes the drains and stops percolation of water in agricultural fields. Due collection and segregation, raising of the level of public awareness and cooperation, recycling as per the specifications laid down by the Bureau of Indian Standards, developing of biodegradable plastics and the use of alternative models of plastic waste management such as energy recovery should be immediately looked into. Research should be conducted to look into the possibilities of converting used plastic into the same petroleum bi-product from

6. *Focus on alternate plastic waste management system, says Baalu*, Financial Express (New Delhi) dated 16.3.2001: CSE-India Green File, March 2001, No. 159 at 58.

which these had been produced. A research conducted in Nagpur's Raisoni College of Engineering has revealed the possibility of converting plastic waste into petrol with a production cost of Rs. 7 per litre.[7] If the claim is true, it can solve the global problem of plastic disposal. The invention of the technology which can convert plastic waste into liquid fuels like lubricating oil, petrol, diesel and LPG has been described as a 'boon' for India which produces 5,600 tons of plastic waste every day.[8] Because of its wide applicability and utility, it may not be desirable to ban plastic.

8.3.21 The basic cause of concern is the dumping of plastic waste in India by developed countries. More than 59,000 and 61,000 tons of plastic waste found their way into the country in 1999 and 2000 respectively. Most of this waste was from industrialised countries like Germany, U.K., the Netherlands, Japan, France and U.S. and included highly toxic plastic such as PVC.[9] There should be an immediate ban on plastic waste import and consumption of plastic as such should be reduced.

8.3.22 The general public should be made aware of the harmful effects of coloured polythene bags so that they can discontinue their use. The burning of these bags emit toxic gases and pigments thereby endangering human life and vegetation. Moreover, the plastic bags clog the drains by obstructing flow of water causing sanitation problems.

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7. Vivek Deshpande, *Petrol from plastic? Nagpur holds the secret*, New Indian Express (Hyderabad), dated 8.6.2003: CSE-India Green File, June 2003, No. 186 at 133.
8. *Now, fuel from plastic waste*, Business Line (New Delhi), dated 10.3.2003: CSE-India Green File, March 2003, NO. 183 at 113.
9. *Plastic waste is dumped on India, say NGOs*, Times of India (Bombay) dated 14.1.2002: CSE-India Green File, January 2002, No. 169 at 71.

The concerned authorities should initiate a vigorous anti-plastic carry bag drive apart from educating the public on its harmful effects

8.4 Hazardous Chemicals

8 4 1 The manufacture and use of persistent and hazardous chemicals should be strictly prohibited in order to ensure sustainable development Toxic release inventories and right to know need to be applied by every country with respect to industrial facilities The public has a basic human right to be free of toxic contamination and, therefore, a right to know what contaminants are being released from industrial facilities Business confidentiality argument is not a valid one, once a substance is released from a facility into the public domain The public interests and environmental health outweigh any such contention [10]

8 4 2 The exchange and availability of information, identification of hazards presented, the substitution of hazardous chemicals, use of chemicals for specific applications, proper labeling of chemicals in consumer products, and implementation of the precautionary principle and polluter-pays principle are some of the approaches which should be made applicable to chemicals' manufacture, marketing or use

8 4 3 Where a chemical is identified as hazardous or where the information to evaluate its hazards is insufficient, the need for or necessity of that chemical in the society should be considered If the hazardous chemical is not essential, immediate measures should be taken to phase out that chemical

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10 *Phasing Out Hazardous Wastes and Toxic Chemicals A Sustainable Development Imperative*, Greenpeace International, Briefing Paper Nr 5 for WSSD Precom 3

8.4.4 Chemicals should be regulated on the basis of their intrinsic properties (hazard), with special emphasis on persistence, toxicity and bioaccumulation. In addition to the evaluation of any intrinsic hazardous properties (hazard identification), all aspects of their manufacture, use and disposal should be taken into account.

8.4.5 The ultimate goal should be to replace hazardous chemicals with those which present no identifiable hazard to man or the environment. The responsibility of those manufacturing or marketing a hazardous chemical should not end with the process of replacement. The moral and financial responsibility for measures to prevent further release and to remediate existing damage should remain with the originators.

8.4.6 Latest techniques should be adopted in the industrial safety management norms to prevent any widespread damage as happened in Bhopal. These techniques should be made an integral part of a company's overall productivity programme.

8.4.7 All industries and traders dealing in hazardous chemicals should be shifted from populated areas to outskirts of the city in order to prevent the occurrence of any accident.

8.4.8 The caustic-chlorine industry, based on the mercury cell technology, is regarded as the mother of all chemical industries. Caustic soda and chlorine are used in almost all industries in one form or the other. These are extensively used to make products like plastics, bulbs, batteries, thermometers and pesticides. However, the mercury cell technology is highly polluting in nature. Mercury

poisoning can cause nervous system damage including personality changes With the kind of data available on mercury use in India, it is clear that a massive human tragedy is in the making

While European industries use 1 5 to 2 grams of mercury to produce 1 ton of caustic soda, Indian companies use 146 grams of mercury to produce the same amount [11] Besides using polluting technologies, India is importing a large quantity of mercury Between 1998-2001, the total mercury imports stood at 170-190 tons, accounting for 10 percent of total global consumption [12] To prevent mercury pollution, the experts have suggested use of safer and cleaner technologies in the field like membrane cell technology and if possible, falling film electrolysis (FFE) technology FFE process does not require electrolysis of water and hence reduces energy consumption upto 25 percent It also does not release hydrogen into the environment

8 4 9 Stockholm Convention, 2001, signed by 91 countries, seeks to eliminate from the world twelve POPs, known as 'dirty dozen' It is a legally binding agreement which envisages protection of human health and environment against POPs It sets out control measures covering the production, import, export, disposal in an environmentally sound manner and use of POPs Parties to the Convention are required to promote best available techniques and practices for replacing existing POPs while preventing the development of new POPs It also calls for

11 Sunita Narain, *Rating the chlorine sector*, Business Standard (New Delhi) dated 3 9 2002 CSE-India Green File, September 2002, No 177 at 99

12 Sunanda Sanganeria, *Deploying polluting waste is the key*, Business Standard (New Delhi) dated 9 9 2002 Id at 101

the use of cleaner products and materials which do not lead to POP waste, such as PVC plastics.

India participated actively in the negotiations leading to the adoption of the Convention. Later, it was a signatory to it as well. India has already banned the use of 9 of the 12 POPs. The three remaining include PCBs, DDT and dioxins and furans. DDT is mainly used for malaria control. Its use in agriculture has been banned. Although the ban has been in place since 1989, DDT is still finding its way into agriculture use illegally. The increasing amounts of the two most toxic chemicals on the list - dioxins and furans - has also become a subject of concern in Indian context. These chemicals cause cancers and reproductive abnormalities, disrupt the endocrine system and can be passed to the next generation.

While on the one hand, the Government of India signed the POPs treaty, on the other, its actions at home increase the dioxin and furans badly affecting the environment and human health. These two super toxins are still manufactured in abundance and factories exist in our own backyards. Open burning of waste also contributes significantly to the increasing volumes of these poisonous chemicals across India. The Stockholm Convention identifies the incineration of waste as a major source of dioxins and furans and recommends the use of substitute techniques and technologies to avoid the generation of these poisons. This renders incineration an untenable waste management option.[13]

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13 Bharati Chaturvedi, *Poison in our bodies*, Hindustan Times (New Delhi) dated 18.6.2002: CSE-India Green File, June 2002, No. 174 at 101-2.

In view of the nature of Indian waste, there are so many other possibilities besides incineration. A minimum of 60 percent of waste is biodegradable, so it can be easily composted. At least 15 percent can be recycled and a fair amount of the remaining 15 percent is grit and malba. The trick lies not only in the stopping of incineration plants but in promoting safer technologies, building public responsibility, incentives for safe waste handling and more public participation in decision making. These efforts may become part of implementing the Convention.[14]

8.5 Other Significant Observations

8.5.1 Any liability regime pertaining to hazardous substances should aim at strictly implementing the 'precautionary principle'. Since the causal connection between the polluter's activity and the damage is very difficult to establish in such cases, the possible alleviation of burden of proof should be considered. There is a need to avoid the problems before they occur, particularly with regard to serious or irreversible degradation of the environment and harm to future generations.

8.5.2 The 'Polluter pays' principle should be applied in cases of improper handling of hazardous substances. The principle, developed in recent years to combat ecological degradation, imposes absolute liability on the person who creates environmental hazards to compensate the victims. He should pay the cost not only to individual sufferers but also the expenses for reversing the damaged ecology. The principle can be utilised as a useful tool both to prevent and to restore environmental damage.

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14 *Ibid.*

8.5.3 The liability regime should incorporate provisions for mandatory insurance and strict liability in case of hazardous activities. The greater is the possibility of a potential damage, the more a compulsory insurance should be required. Where it is not possible to make the polluter pay, for example, when the potentially responsible party / parties can not be identified, the national compensation funds should be created to ensure effective restoration of the damage.

8.5.4 The environmental impact assessment (EIA) study should be made a mandatory requirement before any hazardous project is cleared / sanctioned. In India, EIA process is governed administratively and not legislatively. Specific provisions should be incorporated in the EPA to make the EIA study a compulsory requirement. The process can serve as a strong weapon to ensure sustainable development.

8.5.5 Regulatory programmes require designated 'responsible parties' to 'remedy' the environmental problem which they have, in part, created. Since remedying an environmental problem, specially related to hazardous substances, is usually a difficult and expensive proposition, the responsible party should encourage industry to avoid, eliminate or minimise such environmental risks. Industry often turns to a lawyer instead of an engineer to deal with such environmental risks.

8.5.6 Current environmental regulation has failed to deter companies from polluting the environment. Improper disposal of hazardous waste, failure to take reasonable safety measures to protect employees and an unacceptably high number of chemical spills and transportation

accidents persist worldwide. In addition, the current system fails to create strong incentives for companies to generate information about the chemicals they use or produce.[15] Unlike food and drug regulations, which require companies to demonstrate affirmatively that a product is safe before marketing it, environmental regulations allow most toxic substances to be used or produced unless and until an agency imposes restrictions. Companies, therefore, have an incentive to ignore information about the risks associated with a particular substance.

Effective regulation requires viable enforcement techniques and accurate risk assessment. The current regulatory system does not adequately address either element. Nor does regulation offer an independently viable solution to environmentally irresponsible behaviour. Under enforcement and limited evaluation of potentially toxic substances produce a system that fails to provide adequate incentives for companies to act responsibly. Violations of environmental regulations result in fines. If violations are detected, companies can factor fines and penalties into the cost of doing business. Moreover, as with many crimes, a company may stand a good chance of avoiding detection altogether. In a context devoid of moral consensus, hazardous and toxic substance regulation will succeed only if companies find that adhering to a regulation is cheaper than violating it.

8.5.7 A large number of potentially toxic substances are currently in industrial use. Regulatory strategies should be evolved that require companies to use due care regarding these substances, to make responsible environmental

15. John S. Applegate, *The Perils of Unreasonable Risk: Information, Regulatory Policy and Toxic Substances Control*, 91 Column. L. Rev. 261, 299-300 (1991).

decisions and to research and evaluate the potential health effects of new chemicals. Similarly, they must ensure that new technologies are implemented in a safe manner. Before the harmful health effects of DDT were recognised, the substance was sprayed indiscriminately on crop fields, with disastrous consequences. Surely no one wishes to repeat this mistake with a new chemical or a biotechnological agent.

8.5.8 We can not draw up a systematic and detailed review of the risks associated with chemical products without first collecting all the available information on existing substances. This is an immense task and so international programmes have been set up to gather data and coordinate results. Programmes of this kind are our primary source of information on hazardous substances. A special legal register has been set up to record data from 12 countries and six international organisations. In 1989, it contained 42,000 records on over 8,000 substances.[16]

8.5.9 In Indian law, the procedure to be adopted by the Board / Committee for the grant of no objection certificate to an industry is effective and should be adhered to. The person desirous of getting a licence has to file an application in the prescribed form with all technical details relating to the manufacturing process along with proposed measures with respect to water and air pollution control. Details regarding solid waste disposal, hazardous waste handling, storage of hazardous chemicals and the type and nature of industry have also to be furnished. The Boards / Committees should grant consent only after strictly following the prescribed standards.

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16 *Chemicals and Genetically Modified Organisms*, EC, Caring for Our Future, Action for Europe's Environment, Brussels - Luxembourg, 1997 at 120.

8 5 10 However, even after the establishment of Central & State Pollution Control Boards in India long back, our waters are still dirty, the air is foul, the volumes of municipal and hazardous wastes are increasing, health costs are mounting, the people and the courts are worried about the environment and the governments are still in search of policy, direction and will The Pollution Control Boards in charge of controlling and monitoring pollution are unable to get the men, money and infrastructure to perform the job which seems to be beyond their means

The Boards are generally not treated with respect or importance We have not created a mechanism to ensure that they are viewed as important institutions They do not enjoy autonomy If any official of the Board wants to do something, he gets transferred Their composition, resources and operations vary widely, despite common constraints There are no fixed norms for staffing, non-technical members dominate, vacancies are not filled in time and the resources and State support available vary The CPCB Chairman himself admitted that the laws have provided for an inherently weak set up A Board with 17 members has just two full-time members Pollution control is a scientific and technical job, but the Board is often headed by Indian Administrative Services (IAS) officials and politicians Civic authorities, against whom the Boards are sometimes required to act, find representation on the Boards. To top it all, officials, even Chairman are changed quite frequently [17]

17. Chandrika Mago, *Pollution has Sate Boards in Serious Tangle*, Times of India, dated 24.8.2001: CSE-India Green File, August 2001, No. 164 at 54.

The Boards were meant to be funded by states, with some amount coming in from water cess or consent fees, but some states have stopped all funding. Compliance with the orders or directions of the Board remains poor. In practice, the Boards have found it difficult to move effectively against offenders. Virtually nothing can be done without the intervention of the Court in one form or the other. In courts also, the work of the Board gets affected due to the inability of the Government to hire the best lawyers. The Government seems unable and unwilling to set its house in order.[18] The courts have also, very often, expressed their dissatisfaction over the functioning / performance of these Boards or Committees. For example, in *M.C. Mehta (Calcutta Tanneries' Matter)* v. *Union of India*,[19] the Supreme Court observed that it is needless to say that the State of West Bengal and West Bengal Pollution Control Board are wholly remiss in the performance of their statutory obligations to control pollution and stop environmental degradation. Similarly, in *State of M.P.* v. *Kedia Leather and Liquor Ltd.*,[20] the Court observed:

> It is to be remembered that a statutory board is constituted under the Act for implementing the Act or rules framed thereunder and not only for holding post or wielding power... If it fails to discharge its functions by overlooking apparent defaults, no purpose is served in maintaining such statutory board.

Since the Boards / Committees are the basic enforcement agencies so far as the proper regulation and control of hazardous substances in India is concerned, their effective functioning / performance ought to be ensured.

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18 *Ibid.*
19 (1997) 2 SCC 411, 413.
20 (2001) 9 SCC 605, 607.

The incorporation of the above stated suggestions can certainly improve the existing legal regime pertaining to hazardous substances. It is admitted that the present study is primarily focussed on the efforts made in India at the Central level and there is a need for further studies in this area at the state and local levels. Some of the problems pertaining to hazardous substances can be best handled at the local level. An empirical study based on local level incorporation / implementation of the existing legal regime relating to hazardous substances can be fruitful. Besides, the services of committed persons need to be fully utilised. Persons who have long experience of being an important part of the committees amending the rules and notifications relating to hazardous substances as well as incorporating new Schedules to the rules ought to be availed. Efforts and contribution of such persons help bring parity between Indian and international legal standards.

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